Univerzitet Crne Gore
Prirodno-matematički fakultet

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Broj: 646

Datum: 18 MAR 2019

UNIVERZITET CRNE GORE

-Senat-

U prilogu akta dostavljamo Predlog Odluke Vijeća Prirodno-matematičkog fakulteta sa XXIX sjednice od 28.02.2019. godine, o imenovanju komisije za ocjenu podobnosti doktorske teze i kandidata MSc Jelene Dakić, sa propratnom dokumentacijom.

Prilog:

- Obrazac PD: Prijava teme doktorske disertacije
- Odluka o imenovanju mentora
- Potvrda o studiranju MSc Jelene Dakić
- Uvjerenje o položenim ispitima
- Odluke o izboru u zvanje članova komisije
- Bibliografije i biografije članova komisije

DEKAN

Prof. dr Predrag Miranović

PRIJAVA TEME DOKTORSKE DISERTACIJE

OPŠTI PODACI O DOKTORANDU	
Titula, ime i prezime	MSc Jelena Dakić
Fakultet	Prirodno-matematički fakultet
Studijski program	Matematika
Broj indeksa	2/13
Ime i prezime roditelja	Momir Dakić
Datum i mjesto rođenja	13.12.1987., Podgorica, Crna Gora
Adresa prebivališta	Vasa Raičkovića 23, 81000, Podgorica, Crna Gora
Telefon	0038269554746
E-mail	jelenaadakic@gmail.com, jelena.d@ac.me
BIOGRAFIJA I BIBLIOGRAFIJA	
Obrazovanje	Osnovna škola "Maksim Gorki", Gimnazija "Slobodan Škerović" (dobitnik diplome "Luča 1") Prirodno-matematički fakultet, Podgorica Osnovne studije završila sa prosjekom 9.08 Specijalističke sa prosjekom 9.75 Magistarske studije završila sa prosjekom 10.00 Stečeno zvanje: Msc.Sci Matematike i računarskih nauka
Radno iskustvo	-septembar 2010 - sada, saradnik u nastavi na Prirodno-matematičkom fakultetu Univerziteta Crne Gore
Popis radova	- **"Matematički modeli u biologiji"**, specijalistički rad, Podgorica, 2010 - **"Hopfova bifurkacija u sistemima reakcije difuzije"**, magistarski rad, Podgorica, 2013
NASLOV PREDLOŽENE TEME	
Na službenom jeziku	"Iterativni metodi i neuronske mreže za izračunavanje generalisanih inverza matrica"
Na engleskom jeziku	"Iterative methods and neural networks for the computation of matrix generalized inverses"

Obrazloženje teme

Pojam generalisanih inverza matrica prvi put uveo je Eliakim Hasting Moore 1920, koji je definisao jedinstveni generalisani inverz kao sredinu projekcija matrica. Tema je posebno postala aktuelna od sredine 1950. sa otkrićem svojstva najmanjih kvadrata izvjesnih generalisanih inverza i njihove veze sa rješenjima sistemima linearnih jednačina. R. Penrose je 1955. pokazao da je Moore-ov inverz jedinstvena matrica koja zadovoljava četiri matrične jednačine. Teorija, primjene i metodi izračunavanja generalisanih inverza rapidno su se razvili u posljednjih pedeset godina zbog svoje široke primjene u statistici, nauci, ineženjerstvu kao i matematičkim modelima sa aproksimacijama najmanjih kvadrata, diferencijalnim i diferencnim jednačinama, Markovljevim lancima, loše uslovljenim problemima, itd. U literaturi je dostupan veliki broj različitih metoda za izračunavanje generalisanih inverza, koji se u najopštijem slučaju dijele na direktne (SVD algoritam, QR faktorizacija [1], Gausova eleiminacija[2, 3]) i iterativne metode. Iterativni metodi

oslanjaju se na odgovarajuća uopštenja dobro poznatog hyper-power metoda i Šulcovog metoda.

Pregled istraživanja

Generalisani inverz se definiše kao uopštenje običnog matričnog inverza za neinvertibilne i za nekvadratne matrice. Pretpostavimo da je $A \in \mathbb{C}^{m\times n}$ data matrica i T i S linearni potprostori prostora $\mathbb{C}^n$ i $\mathbb{C}^m$, redom. Jedan od najopštijih generalisanih inverza je $A_{T,S}^{(2)}$. Pod uslovom da je $AT \oplus S = \mathbb{C}^m$, postoji jedinstvena matrica $X \in \mathbb{C}^{n\times m}$ koja zadovoljava:

1. $XAX = X$
2. $\Re(X) = T$
3. $\aleph(X) = S$

gdje su $\Re(X)$ i $\aleph(X)$ slika i jezgro matrice X. U ovom slučaju kažemo da je matrica X spoljni inverz sa zadatom slikom i jezgrom. Ako je $T = \Re(G)$ i $S = \aleph(G)$ za matricu $G \in \mathbb{C}^{n\times m}$ tada je X odgovarajući inverz za matricu G, u radu će biti označen kao G- inverz. Za različite izbore matrice G, X se svodi na različite tipove generalisanih inverza [4].

Uopšteni matrični iterativni metod za računanje spoljnog inverza za datu matricu A je oblika $X_{k+1} = X_k p(AX_k)$ gdje je $p(x)$ proizvoljan polinom određenog stepena. Ovi metodi su u literaturi poznati kao uopšteni (generalisani) Schultz-ovi metodi i primenljivi su na širok spektar generalisanih inverza. Poznat je veći broj metoda ovog tipa u literaturi .

Neuronske mreže za izračunavanje inverza i generalisanih inverza matrica predstavljaju dinamičke sisteme oblika $\dot{V}(t) = F(t, A(t), V(t))$ gdje je $A(t)$ data matrica čiji (generalisani) inverz računamo a $V(t)$ matrica stanja koja konvergira ka inverzu. Ovi dinamički sistemi predstavljaju modele za konstrukciju analognih računara i mikrokontrolera koji omogućavaju računanje inverza i rešavanje odgovarajućih sistema linearnih jednačina u realnom vremenu. Ovaj pristup je naročito pogodan u automatici, konkretno za upravljanje pokretnim djelovima robota odnosno rješavanje problema inverzne kinematike.

Cilj i hipoteze

Cilj istraživanja i doktorske disertacije je analiza i implementacija novih algoritama i neuronskih mreža u problemima određivanja generalisanih inverza. Dosadašnji generalisani Schultz-ovi iterativni metodi $X_{k+1} = X_k p(AX_k)$ uglavnom podrazumijevaju da su koeficijenti polinoma $p(x)$ konstantni. Hipoteza koju postavljamo je da ukoliko na pogodan način variramo ove koeficijente, dobijeni metodi biće značajno brži od postojećih sa konstantnim koeficijentima. Drugi glavni cilj je konstrukcija novih i efikasnijih neuronskih mreža za izračunavanje generalisanih inverza, kao i proučavanje odgovarajućih diskretizacija. Novi predloženi metodi biće upoređeni sa već postojećim algoritmima i jasno istaknute njihova poboljšanja u efikasnosti izvršavanja i brzini konvergencije.

Materijali, metode i plan istraživanja

Zadaci i problemi kojima se bavimo i koje rješavamo u disertaciji relavantni su za oblasti numeričke linearne algebre, matrične analize i djelimično teorije dinamičkih sistema.

U prvom dijelu rada izložićemo poznate generalisane Shultzove iterativne metode za izračunavanje generalisanih inverza. Razmotrićemo nekoliko različitih generalizacija ovih metoda, kod kojih se koeficijenti polinoma $p(x)$ mijenjaju kroz iteracije. Za svaku od predloženih generalizacija ćemo najprije ispitati konvergenciju, a onda ih uporediti sa poznatim metodima kroz odgovarajuće numeričke primjere. Rezultati testiranja pokazaće da li i u kojoj mjeri ima poboljšanja ukoliko se dopusti da koeficijenti polinoma $p(x)$ budu promjenljivi.

U drugom dijelu razmatraćemo nove dinamičke sisteme (neuronske mreže) za računanje generalisanih inverza konstantnih i (vremenski) promjenljivih matrica. Ideja je da se neke od postojećih neuronskih mreža uopšte na izračunavanje znatno šire klase uopštenih inverza, kao i da se konstruišu nove uz pogodan odabir funkcije greške. Proučićemo i diskretizacije ovih neuronskih mreža i porediti ih sa odgovarajućim iterativnim metodima. Rezultati testiranja pokazaće koje to vrijednosti parametara mreže daju sve skupa brže vrijeme izračunavanja u odnosu na sukcesivnu primjenu odgovarajućih iterativnih metoda.

Za svaki predloženi metod biće jasno prikazana osnovna ideja, postupak izvođenja kao i dokaz konvergencije pod odgovarajućim uslovima i za odgovarajuću klasu matrica. Pored toga, svi novi metodi biće implementirani i testirani na pogodno odabranim numeričkim primjerima. Za potrebe implementacije i testiranja koristiće se softveri Matlab i Mathematica. Rezultati testiranja bi trebalo da pokažu koliko su zapravo novi metodi bolji u praksi od postojećih.

Očekivani naučni doprinos

Očekujemo da ćemo predložiti nove iterativne metode i neuronske mreže za izračunavanje generalisanih inverza koje, u nekim slučajevima, mogu biti poboljšanja nekih već poznatih metoda ili sasvim novi algoritmi.
Svi novi dobijeni rezultati, biće izloženi u naučnim časopisima i zbornicima radova koji su od značaja za nauku.

Spisak objavljenih radova kandidata

Popis literature

[1] V. N. Katsikis, D. Pappas, A. Petralias, An improved method for computation of the Moore-Penrose inverse matrix, Appl. Math. Comput.217 (2011) 9828- 9834

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SAGLASNOST PREDLOŽENOG/IH MENTORA I DOKTORANDA SA PRIJAVOM

Odgovorno potvrđujem da sam saglasan sa temom koja se prijavljuje.

Prvi mentor	Prof. dr Marko Petković	
Drugi mentor		
Doktorand	Jelena Dakić	Jelena Dakić

IZJAVA

Odgovorno izjavljujem da doktorsku disertaciju sa istom ili sličnom temom nisam prijavila ni na jednom drugom univerzitetu.

U Podgorici,
27.02.2019.

Ime i prezime doktoranda
Jelena Dakić

Jelena Dakić

Na osnovu člana 32 stav 1 tačka 14 Statuta Univerziteta Crne Gore, u vezi sa članom 29 Pravila doktorskih studija, Senat Univerziteta Crne Gore, u postupku razmatranja prijedloga Vijeća Prirodno-matematičkog fakulteta br. 1030/7 od 17.04.2018. godine i na prijedlog Odbora za doktorske studije, na sjednici održanoj 06.06.2018. godine, donio je sljedeću

O D L U K U

I

Dr Marko Petković redovni profesor Prirodno-matematičkog fakulteta u Nišu, imenuje se za mentora pri izradi doktorske disertacije **kandidatkinji mr Jeleni Dakić,** umjesto dr Vladimira Jaćimovića, redovnog profesora Prirodno-matematičkog fakulteta imenovanog za mentora, odlukom Senata br. 03-529/2 od 04.05.2017. godine

II

Odluka stupa na snagu danom donošenja.

Broj: 03- 1607/2
Podgorica, 06.06.2018. godine

PREDSJEDNIK SENATA

Prof. dr Danilo Nikolić, rektor

UNIVERZITET CRNE GORE
PRIRODNO-MATEMATIČKI FAKULTET
MATEMATIKA
Broj dosijea: **2/2013**

Na osnovu člana 165 Zakona o opštem upravnom postupku ("Službeni list RCG" br. 60/03) i službene evidencije, a po zahtjevu Dakić Momir Jelena, izdaje se

POTVRDA O STUDIRANJU

Student **Dakić Momir Jelena**, rođena **13-12-1987** godine u mjestu **Podgorica**, opština **Podgorica**, Republika **Crna Gora**, upisana je studijske **2013/2014** godine, u `I` godinu studija, kao student koji se **samofinansira** na **akademske doktorske studije**, studijski program **MATEMATIKA**, koji realizuje **PRIRODNO-MATEMATIČKI FAKULTET** - Podgorica Univerziteta Crne Gore u trajanju od **3 (tri)** godine sa obimom **180** ECTS kredita.

Studijske **2017/2018** godine prijavila je *da sluša* **4** predmeta sa **40.00** (četrdeset) ECTS kredita.

Po prvi put iz `III` **(treće)** godine, prijavila je *da sluša* **0** predmeta sa **0.00** (nula) ECTS kredita, što iznosi 0.00% od ukupnog broja ECTS kredita u `III` godinu.

Saglasno Statutu Univerziteta Crne Gore, **Dakić Momir Jelena** je po prvi put prijavila *da sluša* **manje od 2/3**, odnosno **66,67% (šezdesetšest 67/100 %)**, od ukupnog broja ECTS kredita sa `III` godine i studijske **2017/2018** **nema status redovnog studenta** koji se **samofinansira**.

Uvjerenje se izdaje na osnovu službene evidencije, a u svrhu ostvarivanja prava na: (dječji dodatak, porodičnu penziju, invalidski dodatak, zdravstvenu legitimaciju, povlašćenu vožnju za gradski saobraćaj, studentski dom, studentski kredit, stipendiju, regulisanje vojne obaveze i slično).

M. P.

Broj:
Podgorica, 15.03.2019 godine

SEKRETAR,
Ivanović Nataša

UNIVERZITET CRNE GORE
PRIRODNO-MATEMATIČKI FAKULTET
MATEMATIKA
Broj dosijea: **2/2013**

Na osnovu člana 165 stava 1 Zakona o opštem upravnom postupku ("Službeni list RCG", broj 60/03.), člana 115 stava 2 Zakona o visokom obrazovanju ("Službeni list CG", broj 44/14.) i službene evidencije, a po zahtjevu studenta Dakić Momir Jelena, izdaje se

UVJERENJE O POLOŽENIM ISPITIMA

Student **Dakić Momir Jelena**, rođena **13-12-1987** godine u mjestu **Podgorica**, opština **Podgorica**, Republika **Crna Gora**, upisana je studijske **2013/2014** godine, u **I** godinu studija, kao student koji se **samofinansira** na **doktorske akademske studije**, studijski program **MATEMATIKA**, koji realizuje **PRIRODNO-MATEMATIČKI FAKULTET** - Podgorica Univerziteta Crne Gore u trajanju od **3 (tri)** godine sa obimom **180** ECTS kredita.

Student je položio ispite iz sljedećih predmeta:

Redni broj	Semestar	Naziv predmeta	Ocjena	Uspjeh	Broj ECTS kredita
1.	1	ALGERBRA I TOPOLOGIJA DOKTORSKI ISPIT	"A"	(odličan)	10.00
2.	1	ANALIZA-DOKTORSKI ISPIT	"A"	(odličan)	10.00
3.	1	PROSTORI DISTRIBUCIJA	"A"	(odličan)	5.00
4.	1	TEORIJA GRUPA I POVEZANI OSCILATORI	"A"	(odličan)	5.00
5.	1	TEORIJA POTENCIJALA I STOHASTČKI PROCESI	"A"	(odličan)	10.00

Zaključno sa rednim brojem **5.**

Ostvareni uspjeh u toku dosadašnjih studija je:
- srednja ocjena položenih ispita **"A" (10.00)**
- ukupan broj osvojenih ECTS kredita **40.00** ili **66.67%**
- indeks uspjeha **6.67.**

Uvjerenje se izdaje na osnovu službene evidencije, a u svrhu ostvarivanja prava na: (dječji dodatak, porodičnu penziju, invalidski dodatak, zdravstvenu legitimaciju, povlašćenu vožnju za gradski saobraćaj, studentski dom, studentski kredit, stipendiju, regulisanje vojne obaveze i slično).

Broj:
Podgorica, 15.03.2019 godine

M.P.

SEKRETAR,
Ivanović Nataša

Univerzitet Crne Gore
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Broj: 615/1
Datum: 13 MAR 2019

Na osnovu člana 64 Statuta Univerziteta Crne Gore i člana 34 Pravila doktorskih studija, Vijeće Fakulteta na XXIX sjednici održanoj 28.02.2019.godine, donijelo je

ODLUKU

Predlažemo Centru za doktorske studije i Senatu Univerziteta Crne Gore da imenuje Komisiju za ocjenu podobnosti doktorske teze i kandidata sa nazivom **"Iterativni metodi i neuronske mreže za izračunavanje generalisanih inverza matrica"** kandidata mr Jelene Dakić u sastavu:

1. Dr Marko Petković, redovni profesor Prirodno-matematičkog fakulteta Univerziteta u Nišu, mentor (naučna oblast: Matematika i računarske nauke)

2. Dr Milan Martinović, redovni profesor na PMF-u UCG, (naučna oblast: Programiranje i Numerička analiza)

3. Dr Vanja Vukoslavčević, vanredni profesor na PMF-u UCG, (naučna oblast: Matematika i Numerička analiza).

Obrazloženje

Jelena Dakić podnijela je Vijeću Prirodno-matematičkog fakulteta Prijavu doktorske teze pod nazivom **"Iterativni metodi i neuronske mreže za izračunavanje generalisanih inverza matrica"** Vijeće Prirodno-matematičkog fakulteta je shodno članu 34 Pravila doktorskih studija utvrdilo Predlog Odluke za imenovanje komisije za ocjenu podobnosti doktorske teze i kandidata.

Dostavljeno:

- Senatu
- Centru za doktorske studije
- dosije

Dekan
Prof. dr Predrag Miranović

На основу члана 65. Закона о високом образовању («Службени гласник РС» број 76/2005, 100/2007 – аутентично тумачење, 97/2008, 44/2010 93/2012, 83/2013, 89/2013, 99/2014, 45/2015 и 68/2015), члана 40. став 1. тачка 19. Статута Универзитета у Нишу – пречишћени текст («Гласник Универзитета у Нишу» Гласник Универзитета у Нишу» број 8/2014, 6/2015, 7/2015 и 11/2015) и члана 17. Правилника о поступку стицања звања и заснивања радног односа наставника Универзитета у Нишу («Гласник Универзитета у Нишу» број 10/15), Сенат Универзитета у Нишу, одлучујући по објављеном конкурсу за избор наставника у звање редовни професор за ужу научну област Рачунарске науке на Природно-математичком факултету у Нишу, објављеном у дневном листу „Послови" дана 07.10.2015. године, на који се пријавио др Марко Петковић, на седници одржаној 14.03.2016. године донео је следећу

О Д Л У К У
о избору др Марка Петковића у звање редовни професор

Члан 1.

Др Марко Петковић бира се у звање редовни професор за ужу научну област Рачунарске науке на Природно-математичком факултету у Нишу.

Члан 2.

Одлуку доставити др Марку Петковићу, Природно-математичком факултету у Нишу и архиви Универзитета у Нишу.

О б р а з л о ж е њ е

На основу одлуке декана Природно-математичког факултета у Нишу објављен је конкурс за избор наставника у звање редовни професор за ужу научну област Рачунарске науке на Природно-математичком факултету у Нишу. Конкурс је објављен у листу Националне службе за запошљавање „Послови" дана 07.10.2015. године. На објављени конкурс пријавио се један кандидат: др Марко Петковић.

Одлуком Научно-стручног већа за природно-математичке науке број 8/17-01-010/15-011 од 26.10.2015. године, именована је Комисија за писање извештаја о пријављеним кандидатима на конкурс за избор у звање наставника, у следећем саставу: др Предраг Станимировић, редовни професор Природно-математичког факултета у Нишу (ужа научна област: Рачунарске науке), др Предраг Рајковић, редовни професор Машинског факултета у Нишу (ужа научна област: Математика и информатика) и др Милан Тасић, редовни професор Природно-математичког факултета у Нишу (ужа научна област: Рачунарске науке).

Комисија за писање извештаја је 05.11.2015. године доставила Природно-математичком факултету у Нишу извештај, са предлогом да се др Марко Петковић изабере у звање редовни професор. Извештај је на увид јавности стављен дана 05.11.2015. године. У току увида јавности није било приговора на извештај Комисије.

У складу са чланом 13. став 1. Правилника о поступку стицања звања и заснивања радног односа наставника Универзитета у Нишу, Изборно веће Природно-математичког факултета у Нишу, на седници одржаној 16.12.2015. године, утврдило је позитивне следеће оцене:

- оцену резултата научног и истраживачког рада кандидата,
- оцену ангажовања кандидата у развоју наставе и других делатности факултета,
- оцену ангажовања кандидата у развоју наставног подмлатка и
- оцену резултата педагошког рада кандидата.

Студентски парламент Природно-математичког факултета у Нишу утврдио је позитивну оцену педагошког рада кандидата.

На седници Изборног већа Природно-математичког факултета у Нишу одржаној 16.12.2015. године утврђен је Предлог одлуке о избору др Марка Петковића у звање редовни професор.

Природно-математички факултет у Нишу доставио је Научно-стручном већу за природно-математичке науке документацију прописану чланом 14. Правилника о поступку стицања звања и заснивања радног односа наставника Универзитета у Нишу (извештај Комисије, Предлог одлуке Изборног већа Факултета, оцене Изборног већа Факултета, укључујући и мишљење Студентског парламента Природно-математичког факултета у Нишу о педагошком раду кандидата).

У складу са чланом 14а. Правилника о поступку стицања звања и заснивања радног односа наставника Универзитета у Нишу, Научно-стручном већу за природно-математичке науке, дана 22.12.2015. године, извештај је доставила Комисија за оцену испуњености минималних услова учесника конкурса за избор у звања наставника за поље Природно-математичких наука. У извештају је Комисија закључила да др Марко Петковић испуњава минималне услове за избор у звање редовни професор за ужу научну област Рачунарске науке.

Имајући у виду сву неопходну документацију предвиђену Законом о високом образовању и Правилником о поступку стицања звања и заснивања радног односа наставника Универзитета у Нишу, Научно-стручно веће за природно-математичке науке је дало Мишљење (број 8/17-01-001/16-004 од 08.02.2016. године) да др Марко Петковић испуњава услове за избор у звање редовни професор за ужу научну област Рачунарске науке на Природно-математичком факултету у Нишу.

Сенат Универзитета у Нишу је на седници одржаној 14.03.2016. године разматрао предлог Изборног већа Природно-математичког факултета у Нишу, Мишљење Научно-стручног већа за природно-математичке науке, документацију прописану чланом 14. Правилника о поступку стицања звања и заснивања радног односа наставника Универзитета у Нишу (извештај Комисије, Предлог одлуке Изборног већа Факултета, оцене Изборног већа Факултета, извештај Комисије за оцену испуњености минималних услова учесника конкурса за избор у звања наставника за поље Природно-математичких наука) и једногласно донео одлуку да се др Марко Петковић изабере у звање редовни професор за ужу научну област Рачунарске науке на Природно-математичком факултету у Нишу.

ПОУКА О ПРАВНОМ ЛЕКУ:

Учесник конкурса има право приговора на ову одлуку Сенату Универзитета у Нишу у року од 15 дана од дана достављања ове Одлуке. Приговор се подноси преко Природно-математичког факултета у Нишу и одлаже извршење одлуке.

СНУ бр: 8/16-01-002/16-023
У Нишу, 14.03.2016. године

ПРЕДСЕДНИК СЕНАТА УНИВЕРЗИТЕТА

Проф. др Драган Антић

Marko Petković
Date: April 26th, 2018.
e-mail: dexterofnis@gmail.com
Home Page: http://www.pmf.ni.ac.rs/dexter

1. Basic information

Personal Details

Date of Birth: February 4th, 1984.
Gender: male
Martial Status: single
Driving License: B category in Serbia

Education

2006 – 2008, Faculty of Science and Mathematics, Niš, Serbia
Ph.D. in Computer Science
Supervisor: **Prof. dr Predrag Stanimirović**

2002 – 2008, Faculty of Electronic Engineering, Niš, Serbia
Telecommunications
Finished with average mark 9.7[1] (nine point seven).

2002 – 2006, Faculty of Science and Mathematics, Niš, Serbia
Mathematics and Computer Science
Finished with average mark 9.9 (nine point nine), best student in generation

1999 – 2002, High School "Svetozar Marković", Niš, Serbia
Special Department for Talented Students in Mathematics and Computer Science
Finished with average mark 5 (five), best student in generation

1990 – 1998, Basic School "Filip Filipović", Niš, Serbia
Finished with average mark: 5 (five), best pupil in generation

2. Professional achievements

Working Experience

2006 – present, Faculty of Sciences and Mathematics, University of Niš, Serbia
- Full professor (2016-present)
- Associate professor (2012-2016)
- Assistant professor (2009-2012)
- Research/teaching assistant (2006-2008)

2009, Delaware State University, Dover, DE, USA, postdoctoral research scientist

2007 – present, High School "Svetozar Marković", Niš, Serbia
- Teacher in Special Department for Talented Students in Physics
- Teacher in Special Department for Talented Students in Mathematics and Computer Science

[1] In Serbian school system, university marks are from 6 to 10.

2005, Philip Morris International – DIN "Fabrika duvana" AD Niš, Serbia and Montenegro

- Database Software Designer and Coder

2002 – present, Freelancer

Selected projects

- ***KUPID POS Standalone*** – Standalone Windows desktop software for store management. It includes variety of functions for committing transactions, transaction management, gift and loyalty card management, customer management, product management, etc. Software communicates with, and synchronizes local and central host database. Coded in C#. Used technologies: WPF (interface), SQLite (local database). Project outsourced to: *Transactor Technologies Limited*.
- ***MAT*** – Design of several online university courses in mathematics for different levels and university programs. It includes complete material (lecture notes, exercises, practical examples, illustrations etc.) as well as online lectures. One of the courses (***Introduction to Finite Element Method with applications in mechanics***) included complete software solution for implementation and demonstration of these numerical methods. Joint work with Aleksandar Cvetković.
- ***FienupRevEng*** – Software for reconstruction of the images captured through the diffusive opaque layer. Reconstruction is based on the autocorrelation function estimation and Fienup reconstruction algorithm. Coded in Matlab. Joint work with Aleksandar Cvetković. We do not hold the copyright for this software any more.
- ***SimpleGrader*** – Software for automated testing and grading students programming assignments. Coded in *C#*.
- ***FoodRevEng*** – Software for reverse engineering of different recipe, given the nutrition facts. It can approximatelly compute the percentage of each ingredient in the meal, given the nutrition data (like total calories, proteins, carbohydrate, different minerals, etc. per 100 grams). Coded in *C#* (interface) and *C++* (kernel). I do not hold the copyright for this software any more.
- ***Zupcanici*** – Software package for design of planetary cogged carrier. It is an implementation of 39 steps algorithm for complete description of the complete planetary cogged carrier, consisting of 3 types of cogs. Also software provides an implementation of several muticritera optimization methods for optimization of cogged carrier design. Coded in Borland Delphi 7.0. Joint work with Ivan Stanimirović.
- ***Minutiae*** – Prototype of the software for fingerprint recognition and analysis, based on minutiae extraction and matching technique. Software contains the implementation of several different algorithms for minutiae extraction and fingerprint image preprocessing.
- **Automatic Form Generator** – Design and development of the interface in Microsoft Access for automatic generation of the forms for creating, modifying and deleting records, generation of reports and export data in Microsoft Excel. Coded in VBA.
- ***ENalog*** – Complete information system, with user-friendly interface, client-server architecture, for managing tasks in graphics design company. Coded in VB.NET.
- ***Gemini Project (discontinued)*** – Full scale modern MMORPG (Massive Multiplayer Online Role Playing Game) project; Designed and developed complex network game engine for supporting thousands of players in one virtual computer world with encryption and compression algorithms and input engine (KeyAction) for processing input from different input sources (keyboard, mouse, joystick, etc). Coded in VB.NET and VC++.NET. Joint work with Goran Bogdanović, Miloš Stojanović and Radoš Jovanović.

Skills and Knowledge

- Operating Systems

- Microsoft Windows (all 9x and NT based kernels): Excellent, preffered OS
- Linux (Fedora, CentOS): Moderate

- Programming Languages
  - Microsoft Visual C#.Net: Excellent
  - Microsoft Visual C++ (unmanaged): Good
  - Microsoft Visual Basic for Applications (VBA for Microsoft Office): Good
  - Microsoft Visual Basic.Net (release 2002 – 2005): Good
  - Borland Delphi (release 6.0 – 7.0) / Lazarus: Excellent
  - Microsoft Visual Basic (release 4.0 – 6.0): Good
  - Fortran (77, 90, Power Station, Microsoft Developer Studio): Good
  - Assembly for Intel CPUs: Excellent
- Interpreting and script languages
  - Mathematica: Excellent, preffered interpreting language
  - Matlab: Excellent
  - Python (ver. 2 and 3): Good
  - Prolog (Arity Prolog): Good
  - R: Moderate
  - JavaScript: Moderate
  - PHP: Moderate
- Programming APIs
  - Microsoft .Net Framework, in general: Excellent
  - Microsoft DirectX (release 7.0 – 9.0): Moderate
  - General WinAPI (all 9x and NT kernels): Good
  - SQL database system: Good
- Other Software Solutions
  - OrCad PSpice electrical circuit simulator: Good
  - Ansoft Maxwell electromagnetic simulator: Good
- Hardware
  - Intel CPU Architecture Desktop Microcomputers: Excellent
- Most experienced at
  - Developing and implementing various types of algorithms for solving different kinds of problems.
  - .NET development in general.
  - Mathematical modeling and computer based problem solving.

3. Academic achievements

Teaching

- Faculty of Sciences and Mathematics, University of Niš, Serbia
  - Present bachelor and master level courses
    - Information theory and coding (2011/12 – present)
    - Introduction to numerical analysis (2010/11 – present)

3. **Marko Petković**, *Algoritmi numeričke analize*, University of Niš, Faculty of Sciences and Mathematics, 2013 (in Serbian).

- **Books chapters**

1. Paul Barry, Predrag Rajković, **Marko Petković**, *An Application of Sobolev Orthogonal Polynomials to the Computation of a Special Hankel Determinant*, Approximation and Computation - In Honor of Gradimir V. Milovanovic, (W. Gautschi, G. Mastroianni, Th. M. Rassias, eds.) Springer Optimization and its Application, Springer Verlag, 2010.

- **Diploma Thesis**

1. **Marko Petković**, *Modifications of mathematical programming methods and its applications*, University of Niš, Faculty of Sciences and Mathematics, 2006 (in Serbian).
2. **Marko Petković**, *First and second order statistics of fading channels*, University of Niš, Faculty of Electronic Engineering, 2008 (in Serbian).

- **Ph.D Thesis**

1. **Marko Petković**, *Symbolic computation of Hankel determinants and matrix generalized inverses*, University of Niš, Faculty of Sciences and Mathematics, 2008 (in Serbian).

- **Accepted and published research papers in peer-reviewed international journals**

1. **Marko Petković**, Predrag Stanimirović, *Symbolic computation of the Moore-Penrose inverse using partitioning method*, International Journal of Computer Mathematics 82 (2005), 355-367. (M23, IF=0.254)
2. Predrag Stanimirović, **Marko Petković**, *Computing generalized inverses of polynomial matrices by interpolation*, Applied Mathematics and Computation 172 (2006), 508-523. (M22, IF=0.816)
3. **Marko Petković**, Predrag Stanimirović, *Interpolation algorithm of Leverrier-Faddev type for polynomial matrices*, Numerical Algorithms 42 (2006), 345-361. (M23, IF=0.466)
4. **Marko Petković**, Predrag Stanimirović, *Interpolation algorithm for computing Drazin inverse of polynomial matrices*, Linear Algebra and its Applications 422 (2007), 526-539. (M22, IF=0.702)
5. Predrag Rajković, **Marko Petković**, Paul Barry, *The Hankel Transform of the Sum of Consecutive Generalized Catalan Numbers*, Integral Transforms and Special Functions 18 (2007), 285-296. (M23, IF=0.322)
6. Milan Tasić, Predrag Stanimirović, **Marko Petković**, *Symbolic computation of weighted Moore-Penrose inverse using partitioning method*, Applied Mathematics and Computation 189 (2007), 615-640. (M22, IF=0.821)
7. **Marko Petković**, Predrag Stanimirović, Milan Tasić, *Effective partitioning method for computing weighted Moore-Penrose inverse*, Computers & Mathematics with Applications 55 (2008), 1720-1734. (M22, IF=0.997)
8. Zoran Perić, **Marko Petković**, Milan Dinčić, *Simple Compression Algorithm for Memoryless Laplacian Source Based on the Optimal Companding Technique*, Informatica 20 (2009), 1–16. (M22, IF=1.040)
9. **Marko Petković**, Predrag Stanimirović, *Generalized matrix inversion is not harder than matrix multiplication*, Journal of Computational and Applied Mathematics 230:1 (2009), 270-282. (M21, IF=1.292)

10. Milan Bašić, Marko Petković, Dragan Stevanović, *Perfect state transfer in integral circulant graphs*, Applied Mathematics Letters 22:7 (2009), 1117-1121. (M22, IF=0.978)
11. Nebojša Stojković, Predrag Stanimirović, Marko Petković, *Modification and implementation of two-phase simplex method*, International Journal of Computer Mathematics 86:7 (2009) ,1231-1242. (M23, IF=0.478)
12. Milan Bašić, Marko Petković, *Some classes of integral circulant graphs either allowing or not allowing perfect state transfer*, Applied Mathematics Letters 22:10 (2009), 1609-1615. (M22, IF=0.978)
13. Zoran Perić, Milan Dinčić, Marko Petković, *Design of a hybrid quantizer with variable length code*, Fundamenta Informaticae 98:2-3 (2010), 233-256. (M23, IF=0.715)
14. Anjan Biswas, Marko Petković, Daniela Milović, *Topological and non-topological exact soliton solution of the power law KdV equation*, Communications in Nonlinear Science and Numerical Simulation 15 (2010), 3263-3269. (M21a, IF=2.697)
15. Milan Bašić, Marko Petković, *Perfect state transfer in integral circulant graphs of non square-free order*, Linear Algebra and its Applications 433 (2010) 149-163. (M22, IF=1.073)
16. M.S. Ismail, Marko Petković, Anjan Biswas, *1-Soliton solution of the generalized KP equation with generalized evolution*, Applied Mathematics and Computation 216:7 (2010), 2220-2225. (M21, IF=1.534)
17. Anwar Ja'afar Mohamad Jawad, Marko Petković, Anjan Biswas, *Soliton solutions of a few nonlinear wave equations*, Applied Mathematics and Computation 216:9 (2010), 2649-2658. (M21, IF=1.534)
18. Anwar Ja'afar Mohamad Jawad, Marko Petković, Anjan Biswas, *Soliton solutions of burgers equations and perturbed burgers equation*, Applied Mathematics and Computation 216:11 (2010), 3370-3377. (M21, IF=1.534)
19. Anwar Ja'afar Mohamad Jawad, Marko Petković, Anjan Biswas, *Modified simple equation method for nonlinear evolution equations*, Applied Mathematics and Computation 217:2 (2010), 869-877. (M21, IF=1.534)
20. Anjan Biswas, Marko Petković, Daniela Milović, *Topological exact soliton solution of the power law KdV equation*, Applied Mathematics and Computation 217:4 (2010), 1780-1784. (M21, IF=1.534)
21. Marko Petković, Predrag Stanimirović, *Iterative method for computing Moore-Penrose inverse based on Penrose equation*, Journal of Computational and Applied Mathematics 235 (2011), 1604–1613. (M21, IF=1.292)
22. Marko Petković, Milan Bašić, *Further results on the perfect state transfer in integral circulant graphs*, Computers & Mathematics with Applications 61:2 (2011), 300-312. (M21, IF=1.747)
23. Marko Petković, Zoran Perić, Aleksandra Jovanović, *An iterative method for optimal resolution-constrained polar quantizer design*, COMPEL: The International Journal for Computation and Mathematics in Electrical Engineering 30:2 (2011), 574-589. (M23, IF=0.460)
24. Marko Petković, Predrag Rajković, Paul Barry, *The Hankel transform of generalized central trinomial coefficients and related sequences*, Integral Transforms and Special Functions 22:1 (2011), 29-44. (M21, IF=0.759)

25. Anwar Ja'afar Mohamad Jawad, **Marko Petković**, Anjan Biswas, *Applications of He's principles to partial differential equations*, Applied Mathematics and Computation, 217:16 (2011), 7039-7047. (M21, IF=1.534)

26. Ghodrat Ebadi, A.H. Kara, **Marko Petković**, Anjan Biswas, *Soliton solutions and conservation laws on the Gilson-Pickering equation*, Waves in Random and Complex Media, 21:2 (2011), 378-385. (M23, IF=0.737)

27. **Marko Petković**, Milan Tasić, Predrag Stanimirović, *Effective partitioning method for computing generalized inverses and their gradients*, Applied Mathematics and Computation, 217 (2011), 7588-7598. (M21, IF=1.534)

28. **Marko Petković**, Zoran Perić, Aleksandar Mosić, *Optimization of variable-length code for data compression of memoryless Laplacian source*, IET Communications, 5:7 (2011), 906-913. (M23, IF=0.963)

29. Anwar Ja'afar Mohamad Jawad, **Marko Petković**, Anjan Biswas, *Soliton solution for nonlinear Calogero-Degasperis and potential Kadomtsev-Petviashvili equations*, Computers & Mathematics with Applications, 62:6 (2011), 2621-2628. (M21, IF=1.747)

30. Jelena Stefanović Marinović, **Marko Petković**, Ivan Stanimirović, Miloš Milovančević, *A model of planetary gear multicriteria optimization*, Transactions of Famena 35:4 (2011), 21-34. (M23, IF=0.143)

31. **Marko Petković**, Paul Barry, Predrag Rajković, *Closed-form expression for Hankel determinants of the Narayana polynomials*, Czechoslovak Mathematical Journal 62 (137) (2012), 39-57. (M23, IF=0.300)

32. **Marko Petković**, Mihajlo Stefanović, *On the phase crossing statistics and random FM noise in generalized Rice fading channels*, Journal of Electrical Engineering (Elektrotechnicky Casopis) 63:1 (2012), 41-46. (M23, IF=0.546)

33. **Marko Petković**, Dragoljub Pokrajac, Longin Jan Latecki, *Spherical Coverage Verification*, Applied Mathematics and Computation 218 (2012), 9699–9715. (M21, IF=1.534)

34. Dragan Stevanović, **Marko Petković**, Milan Bašić, *On the diameter of integral circulant graphs*, Ars Combinatoria 106 (2012), 495-500. (M23, IF=0.441)

35. Ghodrat Ebadi, A. H. Kara, **Marko Petković**, Ahmet Yildirim, Anjan Biswas, *Solitons and conserved quantities of the Ito equation*, Proceedings of the Romanian Academy Series A 13:3 (2012), 215–224. (M23, IF= 0.537)

36. Predrag Rajković, Paul Barry, **Marko Petković**, *Sobolev orthogonal polynomials in computing of Hankel determinants*, Linear Algebra and its Applications 437 (2012), 2417–2428. (M22, IF=1.005)

37. Radica Bojičić, **Marko Petković**, Paul Barry, *Hankel transform of a sequence obtained by series reversion*, Integral Transforms and Special Functions 23:11 (2012), 803–816. (M21, IF=0.759)

38. Nebojša Stojković, Predrag Stanimirović, **Marko Petković**, Danka Milojković, *On the Simplex Algorithm Initializing*, Abstract and Applied Analysis, Article ID 487870 (2012), 15 pages. (M21, IF=1.442)

39. Radica Bojičić, **Marko Petković**, Paul Barry, *The Hankel transform of aerated sequences*, Integral Transforms and Special Functions 24:9 (2013), 685–699. (M21, IF= 0.814)

40. Zoran Perić, Jelena Nikolić, Aleksandar Mosić, Marko Petković, *Design of Fixed and Adaptive Companding Quantizer with Variable-Length Codeword for Memoryless Gaussian Source*, Informatica 24:1 (2013), 71–86. (M21, IF= 1.627)

41. Anwar Ja'afar Mohamad Jawad, Marko Petković, Petra Laketa, Anjan Biswas, *Dynamics of the shallow water waves with Boussinesq equation*, Scientia Iranica (Transaction B) 20:1 (2013), 179–184. (M23, IF= 0.842)

42. Predrag Stanimirović, Marko Petković, *Gauss-Jordan elimination method for computing outer inverses*, Applied Mathematics and Computation 219:9 (2013), 4667–4679. (M21, IF=1.600)

43. Vladimir Stojanović, Marko Petković, *Moment Lyapunov exponents and stochastic stability of a three-dimensional system on elastic foundation using a perturbation approach*, Journal of Applied Mechanics (Transactions of the ASME / American Society of Mechanical Engineers) 80:5 (2013), 051009. (M22, IF=1.395)

44. Milan Dinčić, Zoran Perić, Marko Petković, Dragan Denić, *Design of Product Polar Quantizers for A/D Conversion of Measurement Signals with Gaussian Distribution*, Measurement 46:8 (2013), 2441–2446. (M21, IF=1.526)

45. Marko Petković, Predrag Stanimirović, *Block recursive computation of generalized inverses*, Electronic Journal of Linear Algebra 26 (2013), 394–405. (M22, IF=0.667)

46. Anwar Ja'afar Mohamad Jawad, Marko Petković, Anjan Biswas, *Soliton solutions to a few coupled nonlinear wave equations by tanh method*, Iranian Journal of Science & Technology (Transaction A) 37:A2 (2013), 109-115. (M23, IF=0.200)

47. Zoran Perić, Milan Dinčić, Marko Petković, *The general design of asymptotic unrestricted polar quantizers with square cells*, Digital Signal Processing 23:5 (2013), 1731–1737. (M21, IF=1.918)

48. Ali R. Soheili, Fazlollah Soleymani, Marko Petković, *On the computation of weighted Moore-Penrose inverse using a high-order matrix method*, Computers & Mathematics with Applications 66:11 (2013), 2344-2351. (M21a, IF=2.069)

49. Marjan Stankov, Marko Petković, Vidosav Marković, Suzana Stamenković, Aleksandar Jovanović, *Numerical modelling of DC argon glow discharge at low presssure without and with Ar (3P2) metastable state*, Romanian Journal of Physics 59:3–4 (2014), 328–338. (M23, IF=0.745)

50. Zoran Perić, Marko Petković, Jelena Nikolić, *Optimization of Multiple Region Quantizer for Laplacian Source*, Digital Signal Processing 27 (2014), 150–158. (M21, IF=1.918)

51. Marko Petković, Predrag Stanimirović, *Two improvements of the iterative method for computing Moore-Penrose inverse based on Penrose equations*, Journal of Computational and Applied Mathematics 267 (2014), 61–71. (M21, IF=1.077)

52. Marko Petković, *Generalized Schultz iterative methods for the computation of outer inverses*, Computers & Mathematics with Applications 67:10 (2014), 1837–1847. (M21a, IF=2.069)

53. Marko Petković, Miodrag Petković, *Hyper-power methods for the computation of outer inverses*, Journal of Computational and Applied Mathematics 278 (2015), 110–118. (M21, IF=1.007)

54. Marko Petković, Predrag Bakić, Andrew Maidment, David Pokrajac, *Asymptotic number of $\mathbb{Z}^3\Delta$ cells covering $C^{(1)}$ surface on uniform grid and complexity of recursive-partitioning*

simulation of septal tissue regions, Applied Mathematics and Computation 252:1 (2015), 263–272. (M21, IF=1.600)

55. Zoran Perić, **Marko Petković**, *Two-dimensional radial mu-law companding quantizer for Laplacian source*, Transactions on Emerging Telecommunications Technologies (European Transactions on Telecommunications) 26:4 (2015), 559-567. (M22, IF=1.354)
56. Marjan Stankov, **Marko Petković**, Vidosav Marković, Suzana Stamenković, Aleksandar Jovanović, *The Applicability of Fluid Model to Electrical Breakdown and Glow Discharge Modeling in Argon*, Chinese Physics Letters 32:2 (2015), 025101. (M23, IF=0.924)
57. Jelena Stefanović-Marinović, **Marko Petković**, Ivan Stanimirović, *An Application of ELECTRE Method to the Planetary Gear Trains Optimization*, Journal of Mechanical Science and Technology, 29:2 (2015), 647-654. (M23, IF=0.703)
58. Vladimir Stojanović, **Marko Petković**, *Nonlinear dynamic analysis of damaged Reddy-Bickford beams supported on an elastic Pasternak foundation*, Journal of Sound and Vibration 385 (2016), 239-266. (M21, IF=2.593)
59. Radica Bojičić, **Marko Petković**, *Orthogonal polynomials approach to the Hankel transform of sequences based on Motzkin numbers*, Bulletin of the Malaysian Mathematical Sciences Society 40 (2017), 19-33. (M22, IF=0.640)
60. Vladimir Stojanović, Predrag Kozić, **Marko Petković**, *Dynamic instability and critical velocity of a mass moving uniformly along a stabilized infinity beam*, International Journal of Solids and Structures 108 (2017), 164-174. (M21, IF=2.760)
61. Radica Bojičić, **Marko Petković**, Predrag Rajković, *Hankel transforms of generalized Motzkin numbers*, Mathematical Methods in the Applied Sciences 40:16 (2017), 5810–5820. (M22, IF=1.002)
62. Vladimir Stojanović, **Marko Petković**, *Dynamic stability of vibrations and critical velocity of a complex bogie system moving on a flexibly supported infinity track*, Journal of Sound and Vibration, DOI: 10.1016/j.jsv.2017.07.057. (M21, IF=2.593)
63. Zoran Perić, **Marko Petković**, Jelena Nikolić, Aleksandra Jovanović, *Support region estimation of the product polar companded quantizer for Gaussian source*, Signal Processing 143 (2018), 140-145. (M21, IF=3.110)
64. Predrag Stanimirović, **Marko Petković**, Dimitrios Gerontitis, *Gradient neural network with nonlinear activation for computing inner inverses and the Drazin inverse*, Neural Processing Letters, DOI: 10.1007/s11063-017-9705-4. (M22, IF=1.620)
65. Vladimir Stojanović, **Marko Petković**, Jian Deng, *Stability of vibrations of a moving railway vehicle along an infinite complex three-part viscoelastic system*, International Journal of Mechanical Sciences 136 (2018), 155-168. (M21, IF=2.884)
66. Vladimir Stojanović, **Marko Petković**, Jian Deng, *Instability of vehicle systems moving along an infinite beam on a viscoelastic foundation*, European Journal of Mechanics A: Solids 69 (2018), 238-254. (M21, IF=2.846)
67. **Marko Petković**, Predrag Stanimirović, Vasilios Katsikis, *Modified discrete iterations for computing the inverse and pseudoinverse of the time-varying matrix*, Neurocomputing, DOI: 10.1016/j.neucom.2018.02.005. (M21, IF=3.317)
68. Predrag Stanimirović, **Marko Petković**, *Gradient neural dynamics for solving matrix equations and their applications*, Neurocomputing, to appear. (M21, IF=3.317)

Summary: 18 * 3 + 15 * 5 + 35 * 8 = 409

- **Accepted and publicated research papers in other international and domestic journals**

69. **Marko Petković**, Predrag Stanimirović, Nebojša Stojković, *Two modifications of revised simplex metod*, Matematicki Vesnik 54 (2002), 163-169.
70. Nebojša Stojković, Predrag Stanimirović, **Marko Petković**, *Several modifications of simplex metod*, FILOMAT 17 (2003), 169-176.
71. Predrag Rajković, Miloš Ivković, **Marko Petković**, *A conjecture about positivity of the polynomials obtained by the expanding of product*, Mathematica Balcanica 18 (2004), 219-230.
72. **Marko Petković**, Predrag Stanimirović, *Partitioning method for two-variable rational and polynomial matrices*, Mathematica Balcanica 19 (2005), 185-194.
73. Milan Tasić, Predrag Stanimirović, Ivan Stanimirović, **Marko Petković**, Nebojša Stojković, *Some useful MATHEMATICA teaching examples*, Facta Universitatis(Niš) Series Electronics and Energetics 18 (2005), 329-344.
74. Predrag Stanimirović, **Marko Petković**, Milan Zlatanović, *Visualization in optimization with MATHEMATICA*, FILOMAT 23:2 (2009), 68-81.
75. Ivan Stanimirović, **Marko Petković**, Predrag Stanimirović, Miroslav Ćirić, *Heuristic algorithm for single resource project scheduling problem based on the dynamic programming*, Yugoslav Journal of Operations Research 19:2 (2009), 281-298.
76. Saša Vukašinović, Predrag Stanimirović, **Marko Petković**, Miroslav Ćirić, *Turing machine and its symbolic implementation*, Facta Universitatis, Ser. Math. Inform. 24 (2009), 53-72.
77. Predrag Rajković, **Marko Petković**, *Generalized Borwein conjecture and partitions of natural numbers*, Functional analysis, approximation and computation 1:2 (2009), 47-56.
78. Anjan Biswas, **Marko Petković**, Daniela Milović, Fayequa Majid, *An exact solution of perturbed solitary waves due to KdV equation*, Australian Journal of Basic and Applied Sciences 4:8 (2010), 3154-3158.
79. Ivan Stanimirović, Milan Zlatanović, **Marko Petković**, *On the linear weighted sum method for multi-objective optimization*, Facta Universitatis, Ser. Math. Inform. 26 (2011), 47-62.
80. **Marko Petković**, Nenad Živić, *The Fekete problem and construction of the spherical coverage by cones*, Facta Universitatis, Ser. Math. Inform. 28:4 (2013), 393–402.

- **Accepted and published research papers in conference proceedings**

81. Predrag Stanimirović, Nebojša Stojković, **Marko Petković**, *Run-time transformations in implementation of linear multi-objective optimization*, Proceedings of the conference PRIM, Budva, Serbia and Montenegro, 2004.
82. **Marko Petković**, *Simulation of Crosstalk between Several Interconnection Lines in CMOS Integrated Circuits*, Proceedings of international conference MIEL, Belgrade, Serbia, 2006.
83. Ivan Stanimirović, **Marko Petković**, Predrag Stanimirović, *Heuristic Algorithm for single resource constrained project scheduling problem*, Proceedings of symposium on strategic management, July 2006, Jagodina (Serbia).
84. **Marko Petković**, Predrag Rajković, *The Hankel transform of shifted Narayana polynomials*, Proceedings of the conference PRIM, Novi Sad, Serbia, 2007.
85. Mihajlo Stefanović, **Marko Petković**, *Envelope Level Crossing Rate of Cosine Signal With Nakagami-q Interference*, Proceedings of international conference TELSIKS, Niš, Serbia, 2007.

86. Dragoljub Pokrajac, **Marko Petković**, Longin Jan Latecki, Aleksandar Lazarević, Nataša Reljin, Janko Milutinović, *Computational Geometry Issues of Reverse Nearest Neighbor Algorithm*, Proceedings of the Hawaii International Conference on Statistics, Mathematics and Related Fields, Honolulu, HI, January 2008.

87. **Marko Petković**, Dragoljub Pokrajac, Longin Jan Latecki, Aleksandar Lazarević, Nataša Reljin, Janko Milutinović, *Algorithms for spherical coverage verification*, Proceedings of the Third international conference of mathematical sciences - ICM2008, Al Ain, UAE, 2008.

88. Mihajlo Stefanović, **Marko Petković**, *Level Crossing Rate of Phase Process and FM Noise in Nakagami-q Fading Channel Influenced by Interference*, Proceedings of international conference ICEST, Niš, Serbia, 2008.

89. Mihajlo Stefanović, Stefan Panić, Aleksandar Mosić, **Marko Petković**, Dušan Stefanović, *Selective combining in channel with correlated alpha-mu fading*, Proceedings of the conference TELFOR, Belgrade, Serbia, 2008. (in Serbian)

90. Stefan Panić, Mirjana Dimić, **Marko Petković**, Dušan Stefanović, Mihajlo Stefanović, *Second order statistics of SC macrodiversity system in the presence of Nakagami-m fading*, Proceedings of the conference INFOTEH-Jahorina, March 2009. (in Serbian)

91. Predrag Rajković, **Marko Petković**, *The non-negative polynomial solution of a few difference equations and systems*, Proceedings of the conference PRIM 2009, Subotica, Serbia 2009.

92. Dragoljub Pokrajac, Janko Milutinović, **Marko Petković**, Keith Offen, *Genetic Algorithms and Sequential Quadratic Programming for Uniform Placement of Points on Hypersphere*, Proceedings of the X Triennial International SAUM Conference on Systems, Automatic Control and Measurements, Niš, Serbia, 2010.

93. Marjan Stankov, **Marko Petković**, Vidosav Marković, Suzana Stamenković, *One-dimensional fulid model of glow discharge formation in argon*, Proceedings of the 12th congress of Serbian physicists, Vrnjacka Banja, Serbia, 2013. (in Serbian)

94. Jelena Stefanović Marinović, Boban Andjelković, Miloš Milovančević, **Marko Petković**, Ivan Stanimirović, Aleksandar Miltenović, *Different Approaches to the Planetary Gear Trains Optimization Application*, 3rd International Conference "Mechanical Engineering in XXI Century"-MASING, 2015.

- **Other papers:**

95. **Marko Petković**, *Calculation of the profile of the liquid drop situated on the solid*, Proceedings of the nineth international compentition in research projects in physics for high school (liceum) students 'First Step to Nobel Prize', 35-44, 2001 (Paper won first place).

Conferences, Workshops, research stays

- **Presentations on international and domestic conferences**

1. **Marko Petković**, *The magnetic field influence on the electrolyte across which exists electric current*, Workshop for basic and high school teachers, Niš, Yugoslavia, 2001. (in Serbian)
2. **Marko Petković**, *Modifications of simplex metod and its implementation*, international conference FILOMAT, Niš, Serbia and Montenegro, 2001.
3. **Marko Petković**, *Two modifications of revised simplex metod*, International conference Mathematical Analysis and its applications (MAA5), Niška Banja (Niš), 2002.
4. **Marko Petković**, *A conjecture about positivity of polynomials obtained by expanding of a product*, International congres MASSEE, Borovets, Bulgaria, 2003.

5. Predrag Rajković, Miloš Ivković, Marko Petković, *Partitioning method for two-variable rational and polynomial matrices*, International congres MASSEE, Borovets, Bulgaria, 2003.
6. Predrag Stanimirović, Nebojša Stojković, Marko Petković, *Run-time transformations in implementation of linear multi-objective optimization*, PRIM, Budva, Serbia and Montenegro, 2004.
7. Marko Petković, *Computing generalized inverses of polynomial matrices by interpolation*, Applied Linear Algebra, in honor of Richard Varga, Palić, Serbia, 2005.
8. Predrag Rajković, Marko Petković, *On recent progress in q-calculus*, Meeting on Multimedia Technology for Mathematics and Computer Science Education, Belgrade, Serbia and Montenegro, 2005.
9. Marko Petković, Predrag Rajković, *Visual considerations of q-polynomials, q-Bezier objects and famous conjectures*, DAAD Spring school on computer graphics, Berlin, Germany, 2006.
10. Marko Petković, *Simulation of Crosstalk between Several Interconnection Lines in CMOS Integrated Circuits*, International conference MIEL, Belgrade, Serbia, 2006.
11. Ivan Stanimirović, Marko Petković, Predrag Stanimirović, *Heuristic Algorithm for single resource constrained project scheduling problem*, Symposium on strategic management, July 2006, Jagodina (Serbia).
12. Predrag Rajković, Marko Petković, *On q-Calculus, Partitions and Tiling*, Meeting on Multimedia Technology for Mathematics and Computer Science Education, Belgrade, Serbia, 2006.
13. Predrag Rajković, Marko Petković, *Hankel Transform of Narayana Polynomials and Generalized Catalan Numbers*, PRIM, Kragujevac, Serbia, 2006.
14. Mihajlo Stefanović, Marko Petković, *Envelope Level Crossing Rate of Cosine Signal With Nakagami-q Interference*, International conference TELSIKS, Niš, Serbia, 2007.
15. Marko Petković, Predrag Stanimirović, *Computing generalized inverses of constant and rational matrices*, Applied Linear Algebra, in honor of Ivo Marek, Novi Sad, Serbia, 2008.
16. Mihajlo Stefanović, Marko Petković, *Level Crossing Rate of Phase Process and FM Noise in Nakagami-q Fading Channel influenced by Interference*, International conference ICEST, Niš, Serbia, 2008.
17. Marko Petković, Predrag Rajković, Paul Barry, *On the Hankel transform of generalized central trinomial coeffcients*, Approximation and Computation, Niš, Serbia, 2008.
18. Marko Petković, Predrag Rajković, Paul Barry, *On the Hankel transform of some integer sequences*, 12. Serbian mathematical congress, Novi Sad, Serbia, 2008.
19. Predrag Stanimirović, Marko Petković, Milan Zlatanović, *Visualization in optimization with MATHEMATICA*, International conference MoNGeometrija, Vrnjačka Banja, Serbia, 2008.
20. Nebojša Stojković, Marko Petković, Predrag Stanimirović, *Finding initial basic feasible solution in simplex algorithm*, PRIM, Subotica, Serbia, 2009.
21. Predrag Rajković, Marko Petković, *Generalized Borwein conjecture and partitions of natural numbers*, PRIM, Subotica, Serbia, 2009.
22. Marko Petković, Predrag Rajković, Paul Barry, *On the special transforms and Hankel determinants of several number sequences*, Functional analysis and its applications, Niš, Serbia, 2009.

23. **Marko Petković**, Dragoljub Pokrajac, Longin Jan Latecki, Janko Milutinović, *Algorithms for spherical coverage verification*, Theoretical computer science - from foundation to applications, Niš, Serbia, 2009.
24. Predrag Stanimirović, **Marko Petković**, Milan Tasić, *Computation of generalized inverses*, Theoretical computer science - from foundation to applications, Niš, Serbia, 2009.
25. **Marko Petković**, Milan Bašić, *Perfect state transfer in integral circulant graphs*, 16th ILAS conference (minisymposium *Linear algebra in quantum information theory*), Pisa, Italy, 2010
26. **Marko Petković**, Dragoljub Pokrajac, Longin Jan Latecki, Janko Milutinović, *Covering hypersphere by spherical hypercaps*, XVI geometrical seminar, Vrnjacka Banja, Serbia, 2010.
27. Dragoljub Pokrajac, Janko Milutinović, **Marko Petković**, Keith Offen, *Genetic algorithms and sequential quadratic programming for uniform placement of points on hypersphere*, X Triennial International SAUM Conference on Systems, Automatic Control and Measurements, Niš, Serbia, 2010.
28. **Marko Petković**, Predrag Stanimirović, *Iterative method for computing Moore-Penrose inverse based on Penrose equations*, 17th ILAS conference, Braunschweig, Germany, 2011.
29. Marjan Stankov, **Marko Petković**, Vidosav Marković, Suzana Stamenković, Aleksandar Jovanović, *Jednodimenzioni fluidni model uspostavljanja tinjavog pražnjenja u argonu*, Kongres fizičara Srbije, Vrnjačka Banja, 2013.
30. **Marko Petković**, Radica Bojičić, Predrag Rajković, Paul Barry, *Hankel transform computation of different integer sequences*, 13th Serbian Mathematical Congress, Vrnjačka Banja, 2014.
31. Marko Petković, David (Dragoljub) Pokrajac, Longin Jan Latecki, Nenad Živić, *Construction and verification of the spherical coverage by hypercaps*, 13th Serbian Mathematical Congress, Vrnjačka Banja, 2014.
32. David (Dragoljub) Pokrajac, Andrew Maidment, **Marko Petković**, Predrag Bakić, Marko Petković, *Mathematical Issues in Software Breast Phantom Simulation*, 13th Serbian Mathematical Congress, Vrnjačka Banja, 2014.
33. **Marko Petković**, Dragoljub Pokrajac, Nenad Živić, *Spherical coverage construction and verification*, TINKOS, Niš, 2014.
34. **Marko Petković**, *Generalized Schultz iterative methods for the computation of outer inverses*, International Workshop on Generalized Inverse and Its Applications, Yangzhou, PR of China, 2014.
35. David Pokrajac, **Marko Petković**, Predrag Bakić, *Computational geometry issues in recursive partitioning based simulation*, Contemporary problems of mathematics, mechanics and informatics, Novi Pazar, 2016.
36. Predrag Stanimirović, **Marko Petković**, *Accelerated gradient descent methods for nonlinear optimization*, SYMOPIS, Zlatibor, 2017.
37. **Marko Petković**, Predrag Stanimirović, *Least squares solutions of matrix equations and their applications*, SYMOPIS, Zlatibor, 2017.
38. **Marko Petković**, Predrag Stanimirović, Miroslav Ćirić, *GNN models for solving matrix equations*, TINKOS, Belgrade, 2017.

39. **Marko Petković**, Predrag Stanimirović, Miroslav Ćirić, *RNN solution of linear matrix equation and its applications*, Approximation and Computation – Theory and Applications (ACTA), Belgrade, 2017.
40. David Pokrajac, **Marko Petković**, Andrew Maidment, Predrag Bakić, Adam Kuperavage, *Improved Simulation of Cooper's Ligaments in Breast Phantoms*, SPIE 2018 Medical Image, Houston, TX, USA, 2018.
41. **Marko Petković**, Predrag Stanimirović, Vasilios Katsikis, *Computing the Inverse and Pseudoinverse of Time-Varying Matrices by the Discretization of Continuous-Time ZNN Models*, SIAM-ALA 2018, Hong Kong, 2018.
42. **Marko Petković**, Predrag Stanimirović, Vasilios Katsikis, *Discrete iterations for computing generalized inverses of time-varying matrix*, 14. Serbian Mathematical Congress, Kragujevac, Serbia, 2018.

- **Research stays and workshops**

1. **Petnica Science Center**, participant of physics seminars for 3 years (2000-2002), junior and senior lecturer at physics seminar (2003-2005) and mathematics seminar (2004-present).
2. **Institute of Physics, Polish Academy of Sciences, Warshaw, 1 month research stay based on award on compentition "First Step to Nobel Prize" for paper "*Calculation of the profile of the liquid drop situated on the solid*", Warszawa, Poland, 2002.**
3. DAAD Workshop on discrete dynamic optimization, 2 weeks, Sofia, Bulgaria, 2003.
4. DAAD Workshop on graph theory and its application to chemistry, 1 week, Niška Banja, Serbia, 2005.
5. DAAD Workshop "Optimization – Theory and Applications", 2 weeks, Sofia, Bulgaria, 2005.
6. DAAD Spring school on computer graphics, Berlin, Germany, 2006.
7. Workshop on stochastic processes and application to system reliability, 2 weeks, Bitola, Macedonia, 2006.
8. Tempus project, Training course in e-learning, 1 week, Novi Sad, Serbia, 2007.
9. DAAD Spring school on computer graphics, Belgrade, 2008.
10. DAAD Workshop "Differential Calculus, Conservation Laws and Applications in Mechanics", 1 week, Novi Sad, Serbia, 2008.
11. **Delaware State University, Dover, DE, USA, 2.5 months postdoctoral research stay, June 15th-September 30th, 2009.**
12. DAAD Workshop "Homogenisation, multi-scale methods and applications", 1 week, Dubrovnik, Croatia, 2010.
13. DAAD Workshop "Symmetry in Science and Arts", 1 week, Vrnjačka Banja, Serbia, 2011.
14. DAAD Workshop "Calculus of variations", 1 week, Struga, Macedonia, 2011.
15. DAAD Workshop "Industrial mathematics", 1 week, Sofia, Bulgaria, 2011.
16. DAAD Workshop "Numerical Optmization and its applications", 1 week, Novi Sad, Serbia, 2012.
17. DAAD Workshop "Applied dynamic programming", 1 week, Ohrid, Macedonia, 2013.
18. DAAD Workshop "Linear Optimal Control of Dynamic Systems", 1 week, Osijek, Croatia, 2013.

19. ESGI (European Study Group with Industry) workshop, 1 week, Novi Sad, Serbia, 2014.
20. **Researh visit to China, September 2014. Visited universities: Fudan Universtity, Shanghai Normal University, Yangzhou University and Nanjing Souteast University.**
21. **Researh visit to Johannes Kepler University, Linz, Austria, October 2017.**
22. **ERASMUS stuff mobility, Jaen, Spain, April 2018.**

Non-commercial scientific software

1. ***BogieStab*** – Software for dynamic stability analysis of a complex bogie systems moving on flexibly supported infinity rail track. Can perform stability analysis for various bogie and ground models. Coded in *Mathematica*. Based on paper [1.60].
2. ***IterativeGInv*** – Software environment for implementation and testing various iterative methods for computation of a wide class of matrix generalized inverses. Coded in *Mathematica*. Based on papers [1.48], [1.51-53].
3. ***SphCovVer*** – Software for solving the spherical coverage verification problem: For a given set of hypercaps of the unit hypersphere in d-dimensional space, determine whether they cover entire hypersphere. Coded in *C++*. Based on the paper [1.33].
4. ***Gauss-Jordan-GI*** – Software for computing outer matrix inverses using different Gauss-Jordan elimination based methods. Coded in *C++*. Based on paper [1.42].
5. ***Quant*** – Library for analysis and design of scalar and polar quantizers. Coded in *Mathematica*. Based on several papers on this topic.
6. ***MarPlex (release 1.0-1.7)*** – Strong software for solving linear programming (LP) problems. Software is using modifications and improvements of simplex algorithm published in papers [1.2] and [1.3]. Coded in *Visual Basic*.
7. ***Interplat*** – Software solution for computing various generalized inverses (including Drazin and Moore-Penrose) using modificated Leverrier-Faddev method, presented in papers [1.7], [1.13] and [1.14]. Coded in *Mathematica*.
8. ***RevMarPlex*** – Modificated version of *MarPlex* using modification of revised simplex method, published in paper [1.3]. Coded in *Mathematica*.
9. ***Moore-Penrose-Poly*** – Software solution for computing Moore-Penrose and weighted Moore-Penrose inverse of polynomial matrix by an effective modification of partitioning method. Contains the implementation of different algorithms based on several papers on this topic. Coded in *Mathematica*.
10. Other small programs solving problems in mathematics, physics, computer science written in Borland C++ and interpreting languages Mathematica and Matlab.

Competitions

- **Programming Competitions**
  1. Awards for two second and one first places at basic school (1996-1998) on national Serbian and Yugoslav competitions.
  2. One first and one second place at High school (2001, 2002) on national Serbian and Yugoslav competitions.
  3. Participation on ACM international student competition (2003).
  4. Member of jury of the regional competitions for basic school students (2007

- Mathematics Compentitions

1. Awards for one third place at basic school (1998) and two second and two third places at high school (2000-2002) on national Serbian and Yugoslav compentitions.
2. Award on International Tournament of Towns (1999).
3. Silver and bronze medal on Balkan Mathematical Olympiad (2001, 2002).
4. Participation on International Mathematical Olympiad (2001).
5. Silver medal on Republic Science and Technology Innovations Competition for high school students (2002).
6. Member of jury of the regional (2004-present) and coutry compentitions (2009-present) for high school students (2004 - present).
7. Giving an extra classes to talented students in high school "Svetozar Marković" (2004 - present)

- Physics Compentitions

1. Awards for three first and one third place at basic school (1997, 1998) on national Serbian and Yugoslav compentitons.
2. Two first and two third places at high school (2000, 2002) on national Serbian and Yugoslav compentitons.
3. One silver and one bronze medal on Republic Science and Technology Innovations Competition (2000, 2001).
4. Bronze medal on International Physics Olympiad (2002).
5. Award for the first place on international research compentition "First Step to Nobel Prize" (2001).
6. Giving an extra classes to talented students in high school "Svetozar Marković" (2006).

Special Awards

1. Award for best pupil in generation at basic school "Filip Filipović", Niš 1998.
2. Award for best student in generation at high school "Svetozar Marković", Niš 2002.
3. Award for best 1. grade student at Faculty of Electronic engineering, Niš 2003.
4. Award for best 2. grade student at Faculty of Electronic engineering, Niš 2004.
5. Award for best student at Department of mathematics, Faculty of Sciences and Mathematics, Niš 2004.
6. The partnership for education and Community Development Program in Niš: Grand award in recognition of superior academic achievement and commitment to future success, Niš 2005.
7. The partnership for education and Community Development Program in Niš: Grant award for the project: "Ni-Wi-Fi-Niš- Free Wireless Community Computer Network" (together with Goran Bogdanović, Aleksandar Ilić, Miloš Veljović, Nikola Todorović, Miloš Radošević, Miloš Stojanović), Niš 2005.
8. Award for the best student at Department of Mathematics, Faculty of Sciences and Mathematics, Niš 2005.
9. Award for the best graduated student in generation at Faculty of Sciences and Mathematics, Niš 2006.

10. Award for the best young scientist at Faculty of Sciences and Mathematics, Niš 2007.
11. Award "Ilija Stojanović" for best scientific paper written by Serbian authors in the field of telecommunications in 2017, presented by Telenor foundation, Belgrade 2017.

4. Other information

Special Interests

- Programming and software engineering
  a. Scientific computation
  b. Windows desktop programming
  c. Windows API programming
- Mathematics and computer science
  a. Numerical mathematics (especially numerical linear algebra)
  b. Mathematical programming and optimization
  c. Machine learning
  d. Integer sequences and related transforms
- Engineering
  a. Information theory and coding
  b. Signal and image processing
  c. Statistical telecommunications theory
  d. Numerical modelling

Spoken languages

Fluid written, spoken, business and technical Serbian and English. Mother language: Serbian.

Hobbies

Cycling, weight lifting, running, maintenance of the hardware and software infrastructure of desktop computers and small networks, ...

UNIVERZITET CRNE G

81001 PODGORICA Cetinjski put bb, P. Fah 99, Jugosl
Tel: (38 81) 14-484 Fax: (38 81) 11-301

Broj: 01-945
Podgorica, 6.10.1998.

Na osnovu člana 97. Zakona o Univerzitetu ("Sl. list RCG" br. 3
i člana 94. Statuta Univerziteta Crne Gore, Naučno-nastavno v
Univerziteta Crne Gore na sjednici održanoj 5.10.1998. donijelo je

O D L U K U
o izboru u zvanje

Dr MILAN MARTINOVIĆ bira se u zva
redovnog profesora Univerziteta C
Gore za predmete Programiranje i Numerička analiza na Odsjeku
matematiku i računarske nauke
za rad na neodredjeno vrijeme sa punim radnim vremenom
Prirodno-matematičkom fakultetu u Podgorici.

PRAVNA POUKA: *Protiv ove Odluke lica koja smatraju da su im povrijedjena prava imaju pravo žalbe Naučno- - nastavnom vijeću Univerziteta Crne Gore u roku od 15. dana.*

REKTOR,

Milan Martinović (PMF) – biografija i bibliografija

Kratka biografija

Milan Martinović rođen je na Cetinju 1954. godine. Osnovnu školu završio je u Nikšiću, a gimnaziju u Podgorici, takođe sa odličnim uspjehom. Studije matematike upisao je na Prirodno–matematičkom fakultetu u Beogradu 1972. godine, smjer Numerička matematika sa kibernetikom. Diplomirao je 1976. godine sa prosječnom ocjenom 9,20. Ispite predviđene planom postdiplomskih studija na istom fakultetu položio je sa prosječnom ocjenom 9,50, a magistarski rad iz oblasti teorije operatora odbranio je 1982. godine. Doktorsku disertaciju "O nekim pitanjima spektralne teorije diferencijalno–funkcionalnih operatora drugog reda" odbranio je 1986. godine, takođe na PMF–u u Beogradu.

U periodu od 1978. godine do 1985. godine proveo je tri školske godine na naučnom usavršavanju u Moskvi, na Mehaničko–matematičkom fakultetu, odnosno Fakultetu za primijenjenu matematiku i kibernetiku Moskovskog državnog univerziteta (MGU) "Lomonosov". Njegov naučni rukovodilac bio je prof. V.A. Sadovničij.

Od 1. novembra 1976. godine stalno je zaposlen na Tehničkom fakultetu, odnosno Prirodno–matematičkom fakultetu UCG u Podgorici.

Podaci o izborima. Izabran je u zvanje docenta 1987. godine. Izabran je u zvanje vanrednog profesora 1993. godine. U zvanje redovnog profesora za predmete Programiranje i Numerička analiza (Odsjek za matematiku i računarske nauke), takođe na PMF–u Podgorica, izabran je 1998. godine.

Reference? Pored naučnih radova u časopisima sa SCI liste, ima i nekoliko objavljenih stručnih radova. Učestvovao je u realizaciji nekoliko projekata iz raznih oblasti (preko fakulteta), u svojstvu saradnika na projektu ili rukovodioca projekta. O svojim naučnim rezultatima referisao je na više internacionalnih i domaćih konferencija. On je autor (on je koautor) nekoliko univerzitetskih udžbenika.

U intervalu 1988–1996. godina obavljao je funkciju šefa Odsjeka za matematiku i računarske nauke PMF–a. U intervalu 2004–2007. godina bio je član Strukovnog vijeća za prirodne i tehničke nauke UCG. Posljednjih godina i trenutno izvodi nastavu iz nekoliko predmeta na osnovnim i specijalističkim studijama, iz oblasti matematike i računarskih nauka, na Prirodno–matematičkom fakultetu.

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U Podgorici, 24. aprila 2018. godine

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Број 2582
Подгорица, 06.11.2012 год

Ref:
Date,

Na osnovu člana 75 stav 2 Zakona o visokom obrazovanju (Sl.list RCG, br. 60/03 i Sl.list CG, br. 45/10 i 47/11) i člana 18 stav 1 tačka 3 Statuta Univerziteta Crne Gore, Senat Univerziteta Crne Gore, na sjednici održanoj 25.10.2012. godine, donio je

O D L U K U
O IZBORU U ZVANJE

Dr VANJA VUKOSLAVČEVIĆ bira se u akademsko zvanje **vanredni profesor** Univerziteta Crne Gore za predmete: Matematika 1 i Matematika 2 na Građevinskom fakultetu i Numerička analiza na studijskom programu Računarske nauke **na Prirodno-matematičkom fakultetu**, na period od pet godina.

REKTOR

Prof. dr Predrag Miranović

Vanja Vukoslavčević, PMF, Biografija i Bibliografija

Kratka biografija:

Rođena sam 11. 11. 1965. u Bačkoj Topoli. Osnovnu školu i Gimnaziju sam završila u Baru kao nosilac diplome „Luča" na oba stepena obrazovanja. Učesnik sam više matematičkih takmičenja. Osnovne studije sam završila na Prirodno – matematičkom fakultetu u Novom Sadu, Odsjek za matematiku, smjer numerička matematika i kibernetika, a zatim sam na istom fakultetu upisala postdiplomske studije matematike, smjer numerička analiza. Uporedo sam radila najprije kao profesor u Školskom centru u Baru, a zatim u Karlovačkoj gimnaziji. Magistarski rad pod nazivom „ Metoda konačnih elemenata u rješavanju singularno perturbovanih problema'' odbranila sam 1994. godine na PMF-u u Novom Sadu, pod mentorstvom prof. dr Katarine Surle. Oktobra 1993. godine zaposlila sam se kao saradnik u nastavi na Prirodno-matematičkom fakultetu u Podgorici. Godine 1994 izabrana sam u zvanje asistenta na Prirodno-matematičkom fakultetu u Podgorici. Od 1.februara 1997. godine do 1. Februara 1999. godine provela sam na usavršavanju Moskvi, na fakultetu VMK Državnog Moskovskog Univerziteta '' M. V. Lomonosov '' gdje sam, pod rukovodstvom prof. dr A. V. Gulina, radila na problemima stabilnosti nekih diferencnih šema. Doktorsku disertaciju '' Stabilnost diferencnih postupaka za rješavanje diferencijalnih jednačina'' odbranila sam 1999. Godine na PMF-u u Novom Sadu pod mentorstvom prof. dr Katarine Surle. Maja 2000. godine izabrana sam u akademsko zvanje docent na Prirodnomatematičkom fakultetu u Podgorici za predmete Numerička analiza na PMF-u, Matematika 1 i Matematika 2 na nematičnim fakultetima. Godine 2005. izabrana sam u akademsko zvanje vanrednog profesora na Prirodno-matematičkom fakultetu u Podgorici za predmete Numerička analiza na PMF-u, Matematika 1 i Matematika 2 na nematičnim fakultetima. Tokom raspusta godine 2007 i 2008. boravila sam na usavršavanju na Matematičkom fakultetu u Corku, Irska, gdje je radila po pozivu sa prof. dr Martinom Stynesom. Godine 2013. reizabrana sam u vanrednog profesora na Prirodno-matematičkom fakultetu u Podgorici. Moj dosadašnji naučno-istraživački rad rezultovao je objavljivanjem radova u časopisima i učešćem na medjunarodnim i domaćim naučnim skupovima. Koautor sam dva didaktička kompleta za učenike osnovnih škola i dvije zbirke zadataka za učenike srednjih škola. U prethodnih pet godina bila sam na dužem bolovanju, što mogu dokumentovati ukoliko je potrebno. Iz tog razloga nisam bil u mogućnosti da se bavim naučnim radom.

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