Curriculum Vitae   (Summer 2023)

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Throughout my career, I enjoyed jobs that require problem-solving and learning: I worked in the statistics department, at companies that develop software related to the healthcare, ATM industry, and taught mathematics and statistics courses at the college level.

As an instructor, I always look for improvement in course delivery and strive to adjust it to the student population. In my courses, I require students to learn the required material but I also guide them to become better learners and team members. I regularly participate in workshops to keep up with the latest technology advancements and course delivery options.

In my role as a coordinator of remedial Basic Algebra (BA) courses at Kent State University at Stark, I looked for ways to improve student success by generating and analyzing reports about student progress. Because remedial courses are known for many challenges there was always a lot to consider.

Due to my programming background, I can propose practical solutions for technology implementation in courses, and develop or evaluate educational software. I have hands-on experience in multiple programming languages, databases, operating systems, project management, management, and product support all of which are useful in my teaching job.

In my research, I focus on intelligent tutoring systems and evaluation of the educational software. I also evaluate the statistical knowledge of college graduates when interpreting statistical data in everyday life.

As a member of the college community, I volunteered for different committees as well as many campus events intended for students.

As my family moved from Ohio to Maryland, I stopped working at Kent State University and am looking for a remote job in areas such as teaching introductory courses in mathematics or statistics, educational software development, course design and management, software quality control, or IT support.

Education

- Doctor of Philosophy, Major in Educational Psychology, concentration in Instructional Technology (2013),   Graduate School of Education, Health and Human Services, Kent State University, Ohio; Dissertation title: Effects of Intelligent Tutoring Systems in Basic Algebra Courses on Subsequent Mathematics Lecture Courses, advisor: Dr. Cindy Kovalik
  The abstract is available at https://eric.ed.gov/?id=ED568546 Direct Link provides the whole .pdf (https://www.proquest.com/docview/1531329002)

- Master of Education in Educational Psychology, Instructional Technology program (2009), Graduate School of Education, Health and Human Services, Kent State University, Ohio

- Completed five graduate courses in Computer Science (1995), at the College of Arts and Sciences, Kent State University, Ohio

- Bachelor of Science in Mathematics (1981), Faculty of Sciences, University of Novi Sad, Serbia. Due to the length of the study, the number of courses taken, and the seminar work, this degree is legally equal to the current Master's degree in Mathematics.

Teaching and Research

Associate Professor, FT NTT   Kent State University at Stark, Ohio (Fall 2020 – Spring 2023)
Assistant Professor, FT NTT   Kent State University at Stark, Ohio (Fall 2014 - Spring 2020)

I taught semester-long mathematics courses such as Introductory Statistics, Quantitative Reasoning, Explorations in Modern Math, and Algebra for Calculus. The courses were in emporium, lecture, hybrid, remote, and online formats. In all courses, I provided electronic class notes and, when appropriate, narrated presentations and simulations. I configured all the courses in the course management system and, when the publishers provided online material and exercises, I incorporated that into the courses. My extensive use of the online environment was very helpful during the COVID-19 pandemic in the Spring of 2020 because the transition from lecture to remote courses was relatively easy.

In my courses, I always try to find and use examples meaningful to my students and emphasize the importance of being precise, explicit, and complete in their communication with me and other students.

I also served as a coordinator for 3-8 instructors who taught Pre-Algebra, Basic Algebra I, and Basic Algebra II. These courses were 7.5 weeks long. I produced weekly and semester reports about student progress. The reports were based on the information available in ALEKS software and the university administration software COGNOS. I conducted a pre-semester meeting with instructors in which we reviewed the changes in the software and decided on the changes in course delivery for the semester. I was the main contact for any technical issues and I taught one section of Basic Algebra each year.

As my family moved from Ohio to Maryland, I stopped working for Kent State University and am looking for a remote job in areas such as teaching introductory courses in mathematics or statistics, educational software development, course design and management, software quality control, or IT support.

Adjunct Instructor, Kent State University at Stark, Ohio (2002-2007 and 2011-2013)

I taught mathematics courses such as Basic Algebra sequence delivered in an intelligent tutor software ALEKS, Explorations in Modern Mathematics, Modeling Algebra, and Elementary Probability and Statistics.

Research

My research is about intelligent tutors, particularly ALEKS software implementation in basic algebra courses. I conducted several studies about ALEKS and concluded that course delivery is as important as the features of the intelligent tutor software and that they should be viewed as a whole. Current theoretical frameworks limit themselves to software features and this approach may lead to unfulfilled expectations in cases when course organization does not complement software. On the other hand, the appropriate course organization may enhance intelligent tutors and fulfill some student needs even when the intelligent tutor software has certain shortcomings.

My other areas of interest are related to students' ability to reason well about statistical data that they encounter in everyday life and their views on mathematics and statistics.

Papers

Lužanin, Z., Kaplar, M., & Hrubik-Vulanovic, T. (2022). Undergraduate STEM and non-STEM students' interpretation of mean in an infographic. Journal of Baltic Science Education, 21(4), 638-650. https://doi.org/10.33225/jbse/22.21.638

Vulanovi´c R. & Hrubik-Vulanovi´c T. (2015). Grammar efficiency and the idealization of parts-of-speech systems, Recent Contributions to Quantitative Linguistics, (A. Tuzzi, M. Beneˇsov´a, & J. Maˇcutek, eds.), De Gruyter, Berlin/Boston, 215–228. https://doi.org/10.1515/9783110420296

Hrubik-Vulanovic, T. (2013). Comparing college math courses with and without ALEKS. *Electronic Journal of Mathematics & Technology* 7(6): 428-439. Online at: https://php.radford.edu/~ejmt

Conference Presentations

Hrubik-Vulanovic, T. (2020) Best General Practices for Synchronous Teaching. Mini-Conference Fine-tuning Our Teaching, Kent, Ohio

Hrubik-Vulanovic, T., Hart, L. (2017) Changes in Developmental Mathematics Courses Based in Research and Real-Time Reports. Ohio Association for Developmental Education Conference 2017. Columbus, Ohio

Hrubik-Vulanovic, T. (July 2016) Evaluation of an Intelligent Tutoring System through Subsequent Mathematics Courses. Invited speaker in the TSG 44 – Distance learning, e-learning, blended learning group at 13th International Congress of Mathematics Education, Hamburg, Germany http://www.icme13.org/

Hrubik-Vulanovic, T. (2013). Evaluation of an intelligent tutor through subsequent courses: Students' view. 10th Annual ERE 2013 conference, Ohio State University, US.

Hrubik-Vulanovic, T. (2012). Comparing college math courses with and without ALEKS. Paper presented at *4th Central and Eastern European Conference on Computer Algebra and Dynamic Geometry Systems in Mathematics Education* (CADGME), Novi Sad, Serbia.

Reviewer

(2022) Ad-hoc reviewer

(2020) Ad-hoc reviewer for the paper in **Learning Disabilities: A Contemporary Journal** http://www.ldw-ldcj.org/

Awards

(2019) Nominated for Distinguished Teaching Award/Award of Distinction (DTA/AOD) in Fall 2018
(2015) Faculty Recognition Award by the University Teaching Council at Kent State University for making a
    the difference in the life of a student.
(2012) Research and Scholarship Grant by the School of Lifespan Development and Educational Services for conference travel expenses, Kent State University

Committee Assignments and Events for Students

I enjoyed working with my colleagues on many committees over the years. Through this engagement, I learned a lot about Kent State and Kent State at Stark. This made me better prepared to help students if they had questions related to their studies but not directly related to my course.

I also volunteered for many events for students. These events are always fun and provide an opportunity to connect with students outside of the classroom.

Committee assignments:
- Faculty Council at Kent State Stark, 2020/2021 and 2022/23
- Learning Outcome Revision Committee, Department of Mathematics, 2015 to 2017
- UCT Proctoring Tools Ad Hoc Committee, Kent State University, Spring 2022 to Fall 2022
- Faculty Council at Stark, 2020/2021 and 2022/23
- Committee II, 2016/2017 and 2016/2018
- Colloquium Committee, 2015/16 and 2021/22
- Faculty Technology Committee, 2018/2019
- Virtual Commencement Committee, Fall 2020

Events for students:
- Student Academic Conference at Stark 2015, 2016, 2017, 2019, 2020, 2022
- Scholarship Day – Spring 2022 and 2023
- Kentiki, 2015, 2016, 2017
- First-Year Success, 2017
- Smart Start, 2019
- Earth Day, 2019 and 2022
- Spirit Fest, 2015 and 2016
- Cultural Festival, 2019
- Hoover High School, College Reality Seminar, 2015
- Boo U, 2015, 2018

Professional Training and Certifications

- FOCI: Focused Online Collaborative Interactions: Series 1: Deepening Student Understanding in Online Mathematics Courses, The Charles A. Dana Center, The University of Texas at Austin; Fall 2019-Spring 2020 certificate
- Each semester attended several training sections about designing an online course, maintaining course accessibility, and lunch and learn sessions.
- Remote Instruction Workshop - Center for Teaching and Learning, Kent State University - 15-hour workshop May 26 – June 1, 2020
- Promoting Equity in Teaching & Learning offered by Kent State at Stark: "In a Diverse Classroom: Making Diverse Voices Count" session – March 2021

Software, Operating Systems, and Hardware

The following software I used as an instructor:
- Course management systems: Canvas, Blackboard Learn, Moodle

- Video and image editing software: Camtasia, Panopto, Kaltura, Photoshop
- Statistical software: SPSS 19 and 20, StatCrunch (Pearson), GPower 3.1
- Web-page editing software: Dreamweaver

The following software I used as a computer professional:
- Programming languages and scripting: C, C#, COBOL, PROGRESS, PRO IV, DOS, VB, Perl
- Development tools: Microsoft Visual Studio 6.2-7.2, Install Shield 6.3 to 12
- Databases: Oracle (7.3 to 10g), DB/2 and UDB
- PC software: MS Office, version control software (Rational, Dimensions, pvcs)
- Operating Systems: Windows 7 and 10, Vista, XP, 2000, NT, 98 and 95, AIX, SCO UNIX, OS/2, SINIX, and EDX
- Hardware Platforms: PCs, RISC 6000, IBM xSeries, IBM S/1, and IBM 4381

Programming and Management of Professional Experience

Diebold, North Canton, Ohio (1995-2011)
Diebold is one of the world leaders in the production of Automatic Teller Machines (ATMs) and the services that manage them. The company has over 15,000 employees and a complex software development environment that follows SDLC best practices. I worked at company headquarters in the global software development area.

In 15 years at Diebold, I worked on:
- Software development in different programming languages and operating systems
- Establishing test plans and doing unit and integration tests
- Defining product requirements and managing projects
- Multiple projects simultaneously and meeting commitment dates
- Problem-solving and advising the best possible solutions
- Training coworkers and customers
- Providing direct customer support. Errors were reported in version control programs.
- Process improvement

Software Engineer II (2006-2011)
I worked on installations for many Diebold products using InstallShield, VBS, Perl, and DOS programming. I worked in C# on the application for the automatic generation of software updates. The application included automation for Word, InstallShield, and Dimensions. During this period I became a certified object-oriented professional. I left Diebold in 2011 to pursue doctoral studies in instructional technology full-time.

Software Engineer I (2000-2006)
I worked in C++ on applications that manage Automatic Teller Machines so that they can deliver individualized customer experience. I trained two new programmers on these products and the software necessary to maintain them. The result of the training was a new product version, so I was in charge of defining product requirements and project management as well. I also trained two programmers and two product managers in Europe on several Diebold products. In 2003 I designed an installation solution for ATM software that supported automatic software upgrades. The solution was part of 8 product releases over several years and was later successfully integrated into subsequent software initiatives indicating flexibility and quality of the design.

Application Specialist III (1997-2000)
I worked in C++ on the application for ATM monitoring and problem notification using voice, fax, and e-mail. I was responsible for the daily maintenance of the database, some server functions, and installations for servers and clients. Servers ran on AIX, NT, and OS/2 platforms and supported Oracle, DB/2, and UDB databases, so I worked simultaneously on multiple operating systems and databases. In some cases, I customized servers according to customer specifications. The application was also implemented on a large scale within Diebold as a service and I occasionally helped with the software configuration and maintenance of that system.

Systems Support Representative (1995-1997)
I worked as a second-level support representative for several Diebold products (campus card systems, housing applications for colleges, and a product for dispensing drugs in hospitals). Since some applications used Oracle and VAX OS, I was trained in both. My primary task was to learn the products, resolve problems reported by customers, and do minor customizations. During this period I traveled to customer sites and participated in product setup and customer training.

P&S Ambulance Service (now American Medical Response), Akron, Ohio
The company provided emergency medical assistance for the Akron/Canton area.

Programmer/Analyst (1994-1995)
I worked for the medical billing department. I developed electronic billing based on the ANSI B39 standard, added new functions to the existing claim processing application, and provided system administration and support for AIX Risc 6000 servers in Texas and Ohio. I also supported day-to-day operations by printing medical claims, helping with monthly billing processing, and resolving any technical or software issues that workers and managers had (40 workstations in all).

General Computer Corporation, Twinsburg, Ohio
The company, among other products, provided software for pharmacy chains such as Rite Aid.

Programmer/Analyst (1993-1994)
I worked on the pharmacy retail software: developed data conversion and communications programs in C created functional specs for mail orders and maintained programs in COBOL.

Government Statistics Department, Novi Sad, Serbia (1981 – 1992)
The department collected and processed statistical data in all areas for the region of two million people.

Operations Supervisor (1989-1992)
System Analyst (1986-1989)
Leading Programmer (1984-1986)
Programmer (1981-1984)
During my 10 years in the Statistics Department, I developed projects in almost all areas such as demography, education, trade, civil engineering, investments, and agriculture. I supervised up to 7 programmers and 5 operators. I programmed in COBOL and PL/I on IBM S/1 and IBM 4381. During the 1991 census, I supervised data input and initial data processing for the region with over 2,000,000 citizens. The task included the training of 20 temporary technical staff and 40 data entry workers to work with optical readers that were connected to the SINIX servers. At the same time, I supervised processing for over 120 recurring statistics projects.