

Nathan JARUS

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EDUCATION

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| EXPECTED 2019 | Ph.D. in COMPUTER SCIENCE Missouri University of Science and Technology , Rolla, MO (formerly UNIVERSITY OF MISSOURI-ROLLA) Graduate Assistantships in Areas of National Need Doctoral Fellow Advisor: Dr. Sahra SEDIGH SARVESTANI Thesis: MODEL TRANSFORMATION FOR CYBER-PHYSICAL SYSTEMS GPA: 4.0/4.0 |
| DECEMBER 2013 | B.S. in COMPUTER SCIENCE Minor in MATHEMATICS Missouri University of Science and Technology , Rolla, MO Office for Undergraduate Research Experience Scholar Advisor: Dr. Sriram CHELLAPAN GPA: 3.7/4.0 |

EXPERIENCE

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| JAN 2014 - PRESENT | Graduate Research Assistant at Missouri S&T Advisor: Dr. Sahra SEDIGH SARVESTANI Carrying out doctoral research on developing models of cyber-physical system dependability attributes. |
| JAN 2016- MAY 2016 | Graduate Teaching Assistant at Missouri S&T Data Structures Laboratory – Computer Science 1001 Taught freshman and sophomore students program debugging, performance analysis, scripting, and version control. This class is a pilot run of a lab that will be mandatory for new students. |
| AUG 2015- JAN 2016 | Graduate Teaching Assistant at Missouri S&T Calculus II Laboratory – Math 1215 Guided groups of freshman and sophomore students through solving problems in an inquiry-based learning environment. Taught three classes of 30 students each. In addition, I provided tutoring assistance to students and proctored and graded exams for the associated lecture. These classes are a pilot run of a new calculus laboratory format. I provided input on problem selection and wrote solutions for the exercises. |
| JAN 2015- MAY 2015 | Graduate Instructor at Missouri S&T Digital Network Design – Computer Engineering 5410 Shared responsibility with Mark WOODARD for instruction and evaluation of a course of 45 senior and graduate students. |

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| AUG 2014- DEC 2014 | Grader at Missouri S&T Digital Network Design – Computer Engineering 5410 |
| AUG 2013 - JAN 2014 | Software Developer at Lumate , Rolla Designed and developed a platform to facilitate data sharing between large heterogeneous databases. |
| JAN 2012 - DEC 2013 | Undergraduate Research Assistant at Missouri S&T Advisor: Dr. Sahra SEDIGH SARVESTANI Researched methods of detecting electrostatic discharge on embedded device peripherals. Modified Linux drivers to gather hardware state information. Developed methods for analyzing state information to statistically determine if a sequence of states demonstrates electrostatic discharge. Work resulted in one journal and one conference publication. |
| JAN 2010 - DEC 2013 | System Administrator at Missouri S&T Information Technology Developed a FUSE filesystem wrapper to support advanced Linux filesystem operations on a network filesystem. Developed and integrated a system for real-time 3D visualization of large data sets. Developed software to convert a generic dataset to a specific format for the visualization system. Supported research projects with both hardware and software. Administrated all on-campus Linux machines. Migrated campus Linux distribution from Red Hat to Ubuntu. |
| AUG 2010- DEC 2012 | Tutor at Missouri S&T Introduction to C++ – Computer Science 1570 and 1971 Taught programming concepts, answered questions, and provided homework guidance to freshman and sophomore students. |
| SUMMER 2013 | Software Development Engineering Intern at Amazon , Seattle Developed an Identity Broker service to vend temporary resource access credentials to clients based on their identity. Deployed service to production and configured monitoring and alarms. |
| SUMMER 2012 | Software Development Engineering Intern at Amazon , Seattle Deployed to production a self-service scaling web service that reduced developer time spent on new clients. The service also predicted hardware requirements each quarter based on individual client growth estimates. Developed a MapReduce log parsing system to monitor actual service use and provide real-life scaling data for better accuracy. |
| SUMMER 2011 | Software Engineering Intern at Garmin International , Kansas City Modified the map routing algorithm to log better statistical data. Created software to analyze generated routes and determine overall fitness of the routing algorithm. Developed a system to allow other engineers to easily test routing algorithm changes. |
| SUMMER 2010 | Software Engineering Intern at Softek Solutions Inc. , Kansas City Developed an Android application that queried a REST web interface. Developed an Android library for future company applications. |

TECHNICAL SKILLS

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| LANGUAGES | Ruby, Python, Haskell, Javascript, C++, C, Java, Perl, BASH, SQL, FLEX, YACC, L ^A T _E X |
| DEVELOPMENT FRAMEWORKS | Matplotlib, Hadoop, Django, Linux Kernel |
| SOFTWARE | GNU toolchain, Vim, Git, Eclipse |

PUBLICATIONS

- 2015 | **N. Jarus**, M. Woodard, M. Ataei, K. Marashi, J. Lin, A. Faza, P. Maheshwari, and S. Sedigh Sarvestani.
“Analytical Modeling of Cyber-Physical Systems: A Survey of Recent Literature”.
To be submitted to *ACM Transactions on Cyber-Physical Systems* in Nov. 2015.
- N. Jarus**, A. Sabatini, P. Maheshwari, and S. Sedigh Sarvestani.
“Detection, Analysis, and Prediction of the Effects of Electrostatic Discharge on USB Peripherals”.
Submitted to the *IEEE Transactions on Instrumentation and Measurement* in Oct. 2015.
- 2014 | M. Albasrawi, **N. Jarus**, K. Joshi, and S. Sedigh Sarvestani.
“Analysis of Reliability and Resilience for Smart Grids”.
In *Proc. of the 38th IEEE Int’l. Computer Software and Applications Conference (COMPSAC)*, Vasteras, Sweden, pp. 529–534.
Selected for inclusion in the 2nd 2015 issue of the *NSF Science of Security Index of Significant Research in Cyber Security*.
- 2013 | A. Sabatini, **N. Jarus**, P. Maheshwari, and S. Sedigh.
“Software instrumentation for failure analysis of USB host controllers”.
In: *Proc. of the IEEE Int’l. Instrumentation and Measurement Technology Conference (I²MTC)*, Minneapolis, MN, USA, pp. 1109–1114.
- 2012 | **N. Jarus**.
“Old Ideas in a New Age: Descartes’ Influence on Modern Animal Farming”.
In: *Missouri S&T Undergraduate Research Conference*.