

# Nathan JARUS

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## EDUCATION

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| EXPECTED 2019 | Ph.D. in COMPUTER SCIENCE, <b>Missouri S&amp;T</b> , Rolla, MO<br>Advisor: Dr. Sahra SEDIGH<br>GPA: 4.0/4.0                           |
| DECEMBER 2013 | B.S. in COMPUTER SCIENCE, <b>Missouri S&amp;T</b> , Rolla, MO<br>Minor in MATHEMATICS   Advisor: Dr. Sriram CHELLAPAN<br>GPA: 3.7/4.0 |

## RESEARCH INTERESTS

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Formal Modeling, Computational Intelligence, Algorithm Development and Analysis, Programming Languages & Type Theory, Critical Infrastructure

## RESEARCH EXPERIENCE

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| DOCTORAL<br>JAN 2014 - PRESENT       | Critical Infrastructure Modeling at <b>Missouri S &amp; T</b><br>Advisor: Dr. Sahra SEDIGH<br>Developing models of cyber-physical system dependability attributes.   |
| UNDERGRADUATE<br>JAN 2012 - DEC 2013 | Software Electrostatic Discharge Detection at <b>Missouri S&amp;T</b><br>Advisor: Dr. Sahra SEDIGH<br>Researched 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. |

## TEACHING EXPERIENCE

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| SPRING 2015 SEMESTER | CO-INSTRUCTOR, Digital Network Design at <b>Missouri S&amp;T</b><br>Lectures and course coordination of an undergraduate and graduate course; with Mark WOODARD |
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## PROFESSIONAL EXPERIENCE

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| AUG 2013 - JAN 2014 | Software Developer at <b>Lumate</b> , Rolla<br>Designed and developed a platform to ease big data sharing between heterogeneous databases. Designed a system for mining ad click data and determining the probability that a particular user will click on a particular ad. |
| JAN 2010 - DEC 2013 | System Administrator at <b>Missouri S&amp;T</b> , Rolla   |

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|                       | 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 terabyte 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. Administered all on-campus linux machines. Migrated campus linux distribution from Red Hat to Ubuntu. |
| SUMMER 2013           | Software Development Engineer at <b>Amazon</b> , Seattle<br>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 Engineer at <b>Amazon</b> , Seattle<br>Deployed to production a self-service scaling web service, which 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 Engineer at <b>Garmin International</b> , Kansas City<br>Modified the map routing algorithm to log better statistical data. Created software to analyze generated routes and determine overall fitness of routing algorithm. Developed a system to allow other engineers to easily test route algorithm changes.  |
| SUMMER 2010           | Software Engineer at <b>Softek Solutions Inc.</b> , Kansas City<br>Developed an Android application that queried a REST web interface. Developed an Android library for future company applications.   |
| AUG 2010-<br>DEC 2012 | Tutor at <b>Missouri S&amp;T</b><br>Introduction to C++<br>Taught programming concepts, answered questions, and provided homework guidance to students.  |

## PUBLICATIONS

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| 2014 | <b>Analysis of Reliability and Resilience for Smart Grids</b><br>Murtadha ALBRAWASI, Kamlesh JOSHI, Nathan JARUS, Dr. Sahra SEDIGH<br>The 38 <sup>th</sup> Annual International Computers, Software, & Applications Conference   |
| 2013 | <b>Software Instrumentation For Failure Analysis of USB Host Controller</b><br>Antonio SABATINI, Nathan JARUS, Pratik MAHESHWARI, Dr. Sahra SEDIGH<br>IEEE International Instrumentation and Measurement Technology Conference<br><br><b>Software Instrumentation And ESD Detection For USB Host Controller</b><br>Antonio SABATINI, Nathan JARUS, Pratik MAHESHWARI, Dr. Sahra SEDIGH<br>Journal Paper currently in preparation |
| 2012 | <b>Old Ideas in a New Age: Descartes' Influence on Modern Animal Farming</b><br>Nathan JARUS<br>Missouri S&T Undergraduate Research Conference, First place in Arts and Humanities   |

## SCHOLARSHIPS

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| SEPT 2009 | Missouri S&T:<br>Curators' Scholarship (\$3,500, 4 years)<br>Excellence Scholarship (\$1,000, 4 years) |
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|           | Dean's Scholarship (\$750, 1 year)   |
|           | Computer Science Dept. Scholarship (\$250, 1 year)   |
|           | First Robotics Scholarship (\$500, 4 years)  |
|           | Miner Alumni Association Silver Scholarship (\$1,250, 4 years)                                       |
|           | Bright Flight Scholarship (\$2,000, 5 years)   |
| SEPT 2012 | Missouri S&T:<br>OURE Scholarship (\$1000, 2 years)<br>Access Missouri Scholarship (\$1100, 2 years) |
| JAN 2014  | Missouri S&T:<br>GAANN Fellowship (5 years)  |

## TECHNICAL SKILLS

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LANGUAGES: C++, Java, Python, Ruby, Perl, BASH, SQL, FLEX, YACC,  $\text{\LaTeX}$   
 FRAMEWORKS: Hadoop, Spring, matplotlib, Android, Pylons, Swing, Linux Kernel  
 SOFTWARE: GNU toolchain, vim, Git, Eclipse, Visual Studio, Subversion  
 OPERATING SYSTEMS: Linux (Ubuntu, Arch, Embedded, Red Hat), Windows (7, Vista, XP)

## EXTRACURRICULAR ACTIVITIES

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| AUG 2010 - MAY 2011 | VICE PRESIDENT, ACM, Missouri S&T chapter                   |
| DEC 2012 - MAY 2013 | Developed algorithms for the Missouri S&T Driving Simulator |