Nathan JARUS

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EDUCATION

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

RESEARCH INTERESTS

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

RESEARCH EXPERIENCE

DOCTORAL JAN 2014 - PRESENT	Critical Infrastructure Modeling at **Missouri S & T** Advisor: Dr. Sahra SEDIGH Developing models of cyber-physical system dependability attributes.
UNDERGRADUATE JAN 2012 - DEC 2013	Software Electrostatic Discharge Detection at **Missouri S&T** Advisor: Dr. Sahra SEDIGH 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

SPRING 2015 SEMESTER	CO-INSTRUCTOR, Digital Network Design at **Missouri S&T** Lectures and course coordination of an undergraduate and graduate course; with Mark WOODARD

PROFESSIONAL EXPERIENCE

AUG 2013 - JAN 2014	Software Developer at **Lumate**, Rolla 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 **Missouri S&T**, Rolla

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 vizualisation system. Supported research projects with both hardware and software. Administrated all on-campus linux machines. Migrated campus linux distribution from Red Hat to Ubuntu.

SUMMER 2013 | Software Development Engineer 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 Engineer at **Amazon**, Seattle

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 **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 routing algorithm. Developed a system to allow other engineers to easily test route algorithm changes.

SUMMER 2010 | Software Engineer at **Softek Solutions Inc.**, Kansas City

Developed an Android application that queried a REST web interface. Developed an Android library for future company applications.

AUG 2010-
DEC 2012 | Tutor at **Missouri S&T**
Introduction to C++

Taught programming concepts, answered questions, and provided homework guidance to students.

PUBLICATIONS

2014 | **Analysis of Reliability and Resilience for Smart Grids**
Murtadha ALBRAWASI, Kamlesh JOSHI, Nathan JARUS, Dr. Sahra SEDIGH
The 38th Annual Interantional Computers, Software, & Applications Conference

2013 | **Software Instrumentation For Failure Analysis of USB Host Controller**
Antonio SABATINI, Nathan JARUS, Pratik MAHESHWARI, Dr. Sahra SEDIGH
IEEE International Instrumentation and Measurement Technology Conference

Software Instrumentation And ESD Detection For USB Host Controller
Antonio SABATINI, Nathan JARUS, Pratik MAHESHWARI, Dr. Sahra SEDIGH
Journal Paper currently in preparation

2012 | **Old Ideas in a New Age: Descartes' Influence on Modern Animal Farming**
Nathan JARUS
Missouri S&T Undergraduate Research Conference, First place in Arts and Humanities

SCHOLARSHIPS

SEPT 2009 | Missouri S&T:
Curators' Scholarship ($3,500, 4 years)
Excellence Scholarship ($1,000, 4 years)

	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:
	OURE Scholarship ($1000, 2 years)
	Access Missouri Scholarship ($1100, 2 years)
JAN 2014	Missouri S&T:
	GAANN Fellowship (5 years)

TECHNICAL SKILLS

LANGUAGES:	C++, Java, Python, Ruby, Perl, BASH, SQL, FLEX, YACC, 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 ACTIVITES

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