

# Tyler J. Banks

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<b>EXPERTISE</b>	Computer Science, Software Engineering, Cyber Security, Machine Learning, Computational Neuroscience
<b>EDUCATION</b> 2017 – Present	<b>University of Missouri</b> Columbia, Missouri PhD in Computer Science Current Student – Machine Learning and Computational Neuroscience focus Advisor: Dr. Satish Nair
2014 – 2016	<b>University of Missouri</b> Columbia, Missouri Master of Computer Science Thesis Project: CNN-Fold: Protein Fold Recognition by Deep Convolutional Neural Networks Advisor: Dr. Jainlin Cheng
2009 – 2013	<b>University of Texas at San Antonio</b> San Antonio, Texas BBA Infrastructure Assurance (Cyber Security) Minor: Computer Science Advisor: Dr. Nicole Beebe
2011 2009	Associate of ISC <sup>2</sup> CISSP Comptia A+, Network+, Security+
<b>TEACHING EXPERIENCE</b>	Broad range of topics covered as a Teaching Assistant over many years, with experience designing curriculum, developing new teaching tools, grading, overseeing labs, and lecturing
Fall 2018	Teaching Assistant, Department of Electrical Engineering and Computer Science, University of Missouri • CMP_SC 4970W: Senior Capstone Design I (78 students): Writing intensive course • Assistance in designing prototype senior projects and grading papers
Summer 2018	Teaching Assistant, Department of Electrical Engineering and Computer Science, University of Missouri • ECE 4995: Undergraduate Honors Research in Computational Neuroscience (13 students) • Full-time lecturer, assisted in development of curriculum
Fall/Spring 2016	Teaching Assistant, Department of Computer Science, The University of Missouri • CMP_SC 4320: Software Engineering (50+ students) • Supervised and assisted 14 team programming projects using Scrum software development
2012 - 2013	Undergraduate TA, Department of Business, The University of Texas at San Antonio • Java I and Java II - Instructional aid for student programming homework and projects
<b>INDUSTRY EXPERIENCE</b>	More than 6 years working full-time in the professional computing field, with experience in cyber security, software engineering, and systems administration.
2017-Present	Cyber Security Analyst, The City of Columbia Government, Columbia, Missouri • Nessus vulnerability management, policy writing, developing phishing training curriculum, SIEM development, UNIX systems, scripting (PowerShell and UNIX), and PKI/Cryptography

- Mentoring/teaching junior system administrators

2015-2017

Software Developer II, Shelter Insurance, Columbia, Missouri

- Team based, interdepartmental programming projects using Git, Java, HTML, PHP, JavaScript SQL, jQuery, REST, and Spring/Boot.

2012

Cyber Security Intern, Pacific Northwest National Laboratory, Richland, Washington

- Identified web-based attacks on the company network, developed scripts, documented policy

2009 - 2011

Computer/Media Technician, Lackland Independent School District, San Antonio, Texas

- Supported staff, developed student identification system and databases
- Maintained network technology (routers/switches), extensive Windows, UNIX, MS Office

## RESEARCH EXPERIENCE

2017 – Present

### *Neural Engineering Laboratory Researcher*

University of Missouri, Columbia, Missouri

- Contributed to a team of PhD student researchers aiming to analyze biologically realistic neural networks. Projects include crustacean cardiac ganglion, hippocampus and micturition.
- Designed programs (SimAgent and SimBuilder) in Python/Tkinter that streamlined the process of designing and running large scale neural simulations on supercomputers.
- Mentored an undergraduate senior in the design of his senior project – automation of parameter selection in small networks and automated rejection sampling
- Maintaining CyNeuro.org website (PHP, HTML, CSS)

2011 – 2013

### *Research Assistant*

University of Texas at San Antonio, San Antonio, Texas

- Developed offsite malware analysis facilities to study statistical prevalence of malicious code
- Custom software and scripts (Bash, Python) were written to facilitate the needs of a client

## AWARDS/ DISTINCTIONS

- Alumni - Dr. Jainlin Cheng's Bioinformatics, Data Mining and Machine Learning Lab, 2016
- NSF SFS Grant Recipient 2011 – Financed final two years of undergraduate education

## PUBLICATIONS AND POSTERS

Latimer B, Chen Z, **Banks T**, Ho D, V Kanta Chantzi, D B Headly, D Pare, Nair SS, "Artificial neural networks for prediction of the local field potential," Society for Neuroscience Poster, San Diego, Ca, Nov 7, 2018.

**Banks T**, Wang J, Samarth P, Kick D, Schulz DJ, Nair SS, "Structure of large cells in crab cardiac ganglion - a computational study," Society for Neuroscience Poster, San Diego, Ca, Nov 5, 2018.

Latimer B, **Banks T**, Ankathatti A, Calyam P, Nair SS, "Software automation for biologically realistic neuro big data simulations," Big Data Neuroscience Workshop: Organized by the Advanced Computational Neuroscience Network (ACNN), Cleveland, OH, Sept 6-7, 2018.

## SKILLS AND QUALIFICATIONS

Computing skills: Programming, Computer Science, Machine Learning, Artificial Intelligence, Algorithms  
Languages: Java, Python, C, C++, C#, Sed, Awk, MATLAB, Octave, JavaScript, PHP, SQL, Cypher

- Public speaking, training, and speechwriting
- Outstanding written and oral communications
- Knowledge of the university environment
- Highly adaptable and capable of learning new areas quickly

**PROFESSIONAL  
ASSOCIATIONS**

- Society for Neuroscience student member
- IEEE member