Veena Krish

PhD Student in Computer Science | New York | https://vkrish1.github.io/ *US Citizen

I'm a 2nd year computer science PhD student at Stony Brook University. Since obtaining my BSE/MSE in Bioengineering from UPenn, working as a data scientist, and co-founding a medical device start-up, I've had a growing interest in the security implications of emerging medical technologies. I'm advised by Professor Amir Rahmati (https://amir.rahmati.com/), and my work spans security, machine learning, and cyber-physical systems.

Academic and Research Experience

PhD Student in Computer Science, Stony Brook University — Aug 2019 – present

GPA: 3.81/4.00 — Stony Brook, NY

Graduate Coursework: Network Security, Systems Security, Machine Learning, Computer Vision, Visualization, Cyber-Physical Systems

TA experience: CSE316: Fundamentals of Software Development, CSE336: Offensive Security

Community engagement: Grace Hopper Conference 2020 scholarship recipient and mentor

TA training ambassador for the College of Engineering and Applied Science (1 of 3 selected)

Executive board member for Graduate Women in Science and Engineering and CS Grad Student Organization

Current/Past Projects:

- Expanding work on the use of optimization theories to define the limits of adversarial threat spaces against medical devices
- Expanding work on defenses against adversarial machine learning attacks by selectively emphasizing important features
- Class project for Network Security: Automated detection of retargeted ads for information flow tracking
  - My group of 4 implemented a web crawler to collect retargeted ad data and a computer vision model to automatically detect them
- Class project for Visualization: Interactive dashboard for comparing common human viruses, based on protein interactions

MSE and BSE in Bioengineering, University of Pennsylvania — May 2016

BSE GPA: 3.48/4.00 (Cum Laude) MSE GPA: 3.33/4.00 — Philadelphia, PA

Selected Graduate Coursework: Linear Algebra, Computational Learning Theory, Brain-Computer Interfaces

TA experience**:** ENGR 105: Scientific Computing (MATLAB) for freshmen and sophomore bioengineers

Community engagement**:** VP of Penn Preceptorials, Volunteer Philosophy Club teacher for Philadelphia outreach program

Research Assistant, Littlejohn Fellow, Litt Translational Neuroengineering Lab (https://littlab.seas.upenn.edu/), UPenn — 2013 - 2014

- Implemented a 3D image coregistration algorithm in a Mac OS application (Objective C, Bash) from a large research collaboration and developed Java command-line tools for the International Epilepsy Electrophysiology Portal; resulting publication:

Azarion AA, Wu J, Davis KA, Pearce A, Krish VT, Wagenaar J, Chen W, Zheng Y, Wang H, Lucas TH, Litt B, Gee JC. An open-source automated platform for three-dimensional visualization of subdural electrodes using CT-MRI coregistration. Epilepsia. Dec 2014. doi: 10.1111/epi.12827

High School Diploma, Hopkins School, New Haven, CT — Jun 2011

Professional Experience

Analyst Programmer, Tessella Inc (https://www.tessella.com/) — 2016 - 2019

- Selected project history from 2 years as a data scientist for the analytics consulting services company: — Needham, MA
  - Implemented bayesian statistical models for a large pharmaceutical company to simulate clinical trials (WPF, C#, .NET)
  - Developed a LIMS application to track biomarkers for a small biotech company (full-stack: Postgres, Java API, Aurelia JS, AWS-hosted).
  - Primary data scientist on an project to understand relationships among poultry gut microbial data and nutrition (Python, SQL)

Co-founder, Shock Analytics LLC (https://www.crunchbase.com/organization/shock-analytics) — 2015 – 2019

- Designed system for noninvasive measurement of systemic vascular resistance, launched from UPenn — Philadelphia, PA
- Built the initial prototype (MATLAB and C/Arduino) and developed software for data collection and modeling (Arduino, C#, R Shiny).
- Accepted into the DevelUPmed accelerator, which provided mentorship in defining business goals and building rapid prototypes.
- Patent (pending): Methods, Systems, and Computer Readable Media for Measuring Systemic Vascular Resistance

Developer, Art & Alchemy — 2015 - 2016

- Part-time developer for a startup invested in immersive experiences for art, gaming, and social impact. — Philadelphia, PA
- Helped develop a system in MATLAB and C++ to analyze breathing from the Sony Morpheus microphone for VR gameplay.

Technology Fellow, Coalition for Queens (https://www.pursuit.org/) — Summer 2015

- Assisted curriculum development for nonprofit that offers app development classes as a means of economic mobility. — Queens NY