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
Executive board member of Graduate Women in Science and Engineering and CS Grad Student Organizations

Current Projects (2019 – present):

- PhD research focusing on the limits of adversarial threat spaces against medical devices
- Developing 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

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

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

- Data Scientist for analytics consulting services company; selected project history: — 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