# André N. Shannon

1333 Merced St, Richmond, CA, 94804
andrejshannon@gmail.com | +1 (540) 200-7692 | linkedin.com/in/andre-shannon

## EDUCATION

**University of Richmond,** School of Arts and Sciences, Richmond, VA *May 2022*
*Bachelor of Science in Mathematics and Computer Science*, summa cum laude
**GPA**: 3.89/4, *Departmental Honors in Computer Science*

**Relevant Classes:** Machine Learning, Advanced Linear Algebra, Data Structures, Software Systems Development, Algorithms, Computer Security, Programming Languages, Android Programming

## EXPERIENCE

**University of Richmond Computer Science Department**, Richmond, VA *Fall 2021-Spring 2022*
*Independent Researcher, supervised by Dr. Douglas Szajda*
- Developed provably robust deep learning explanation methods for image classifiers using Python
- Reviewed literature and collaborated with Univ. of Florida colleagues to edit prototype code
- Presented findings in honors thesis and gave oral presentation to university community

**University of Richmond Computer Science Department**, Richmond, VA *Summer 2021*
*Research Assistant, supervised by Dr. Douglas Szajda*
- Applied explanation methods to deep learning voice processing systems using Python
- Explored current explanation models and adversarial attacks and defenses with 7-student team
- Presented findings with research team in oral and poster presentations to university community

**University of Richmond Academic Skills Center**, Richmond, VA *Fall 2021-Spring 2022*
*Academic Tutor*
- Individually tutored 20+ students in Data Structures, Computer Organization, Algorithms, Discrete Structures, Software Systems Development, and Introduction to Computing
- Held weekly drop-in hours for undergraduate computer science students

**University of Richmond Computer Science Department**, Richmond, VA *Summer 2020*
*Research Assistant*, *supervised by Dr. Jory Denny and Dr. Jeremy LeCrone*
- Explored motion planning for car-like robot models with an emphasis on safety using Python
- Worked with research team to define and sample medial axis structures in state space
- Collectively updated and expanded large-scale existing C++ motion planning code base

**University of Richmond Mathematics Department**, Richmond, VA *Summer 2019*
*Research Assistant, supervised by Dr. William Ross*
- Transmitted, compressed, and denoised images using Parseval Frames, Fourier Discrete Cosine Transform, and wavelets, all in Mathematica
- Presented findings with research team via oral and poster presentations to university community

## LEADERSHIP

**Virginia Commonwealth Univ. Recreation and Wellness**, Richmond, VA *Spring 2021-Spring 2022*
*Team-Building Facilitator, Outdoor Adventure Program*
- Conducted variety of portable, low, and high challenge and ropes course activities
- Facilitated group icebreakers and team-building initiatives
- Performed regular safety inspections of the high ropes challenge course

**University of Richmond Recreation and Wellness Dept.**, Richmond, VA *Spring 2020-Spring 2022*
*Trip Leader, Outdoor Adventure and Recreation Program*
- Organized and led biking, hiking, camping, and kayaking trips for groups of 8+ students
- Trained in CPR and first aid to ensure safety and wellbeing of participants
- Educated participants on proper outdoor safety and recreation protocol

**University of Richmond Quidditch Team**, Richmond, VA *Spring 2020-Spring 2022*
*Captain (2021-2022), Safety Officer (2020-2022), Money Manager (2021-2022)*
- Planned, organized, and led practices, tournaments, and social events
- Trained in CPR, first aid, and emergency response protocol to ensure safety of participants
- Managed yearly club funds of $1,000+ and all team equipment

## PUBLICATIONS / PRESENTATIONS / PERSONAL PROJECTS

**Shannon, André**, "Developing Provably Robust Explanation Methods for Image Classifiers" (2022). Honors Theses. 1656. https://scholarship.richmond.edu/honors-theses/1656 *April 2022*

**Shannon, André**, Nikita Morozov, Angela Stefanovska, Christ Athiogbey, Vi Pham, Grant Szajda, Oheneba Berko, "Explaining Automated Voice Processing Systems." Poster Presentation at Arts and Sciences Student Symposium, Richmond, VA, April 22, 2022. *April 2022*

Kudlay, Vadim, **André Shannon**, "Defining Safety For Self-Driving Cars: Planning on the Medial Axis for Non-Holonomic Systems." Virtual Presentation at Fall Research Colloquium, September 9, 2020. *September 2020*

**Shannon, André**, Nathan Lyell, Maggie Dong, Steven Zhang, and Bill Shen, "Transmitting, Compressing, and Denoising Images." Oral Presentation at Fall Research Colloquium, Richmond, VA, September 2, 2019. *September 2019*

**Discord Bot** *Fall 2021*
- Integrated OpenAI's GPT-3 NLP model into a Discord chat bot
- Built with PRAW Reddit API and hosted on AWS EC2

**MNIST Image Classifier** *Summer 2021*
- Created a Python ML classifier to classify digits from MNIST dataset
- Built from scratch and Numpy external library

## AWARDS / FELLOWSHIPS / HONORS / ACADEMIC SOCIETIES

**Mary Church Kent and Joseph F. Kent Computer Science Award** *Fall 2021-Spring 2022*
**James D. Crump Prize:** mathematics departmental award *Fall 2021-Spring 2022*
**Phi Beta Kappa:** international academic honor society *Spring 2022-Present*
**VS Lawrence scholarship:** mathematics departmental scholarship *Fall 2020-Spring 2021*
**Outstanding Student in Mathematics:** mathematics departmental award *Fall 2020-Spring 2021*
**Presidential Scholar:** one-third tuition academic merit scholarship *Fall 2018-Spring 2022*
**UR Summer Research Fellowship:** fully funded research projects *Summer 2019, Summer 2021*

## SKILLS & INTERESTS

**Programming Languages:** Python, C++, Java, basic MIPS Assembly
**Other Computer Skills:** Mathematica, LaTeX, Git
**Extracurricular:** Quadball Club, Men's Ultimate Club, Outdoors Club, Intramural Soccer, Piano
**Language:** Conversational Spanish