Raymond Muller | Purdue University

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Summary

PhD Candidate in Computer Science at Purdue University, specializing in security for computer vision and autonomous systems. I have interned at several government institutions working on various computer-related applications spanning computer vision, network security, software engineering, and web development. I have authored 9 papers in top cybersecurity conferences, and my published work includes several open source projects. I am also a martial artist, having studied a variety of mixed martial arts styles. I have a black belt in Taekwondo and have teaching experience in parkour. I am a former Western States Chess Champion and a licensed open water SCUBA diver.

Experience

Graduate Research Assistant — Purdue University   Aug 2022 — June 2025
Specialized in autonomous systems security under PurSec Lab. As group lead under Dr. Berkay Celik, I have focused on and mentored students in research focusing on physically applicable security in perception for autonomous systems, including adversarial machine learning and computer vision.

Computational Engineering Student Intern — Lawrence Livermore Ntnl Labs   May 2019 — Prsnt
Over the course of over 4 years I have worked on various aspects of Ground Penetrating Radar Systems, including implementing object detection systems, creating UIs through full stack development, and application dockerization.

Doctoral Fellow — National Security Innovation Network   June 2023 — Aug 2023
Worked on critical national security project sponsored by the Department of Defense.

Student Intern — CCC Department of Information Technology   Oct 2018 — May 2019
Worked on web and software development for Contra Costa County Tax Collector's Office.

Education

Purdue University — PhD, Computer Science   2020 — 2025
Working in computer vision and security research under Dr. Berkay Celik.

California State University - East Bay — MS, Computer Science   2019 - 2020
Graduated with Master's of Science in Computer Science with a 3.97 GPA.

California State University - East Bay — BS, Computer Science   2017 - 2018
Graduated Summa Cum Laude in December 2018.

Publications

- DRIVETRUTH: Automated Autonomous Driving Dataset Generation for Security Applications (Workshop on Automotive and Autonomous Vehicle Security, co-located at NDSS 2022)
- Physical Hijacking Attacks against Object Trackers (ACM Conference on Computer and Communications Security 2022)
- Evaluating perception attacks on prediction and planning of autonomous vehicles (USENIX Security 2022)
- That Person Moves Like A Car: Misclassification Attack Detection for Autonomous Systems Using Spatiotemporal Consistency (USENIX Security 2023)
- Demo: Physically Hijacking Object Trackers (ISOC Symposium on Vehicle Security and Privacy, co-located at NDSS 2023)
- Discovering Adversarial Driving Maneuvers against Autonomous Vehicles (USENIX Security 2023)
- VOGUES: Validation of Object Guise using Estimated Components (USENIX Security 2024)
- Physical ID-Transfer Attack against Multi-Object Tracking via Adversarial Trajectory (Annual Computer Security Applications Conference [ACSAC] 2024)
- Physical Hijacking Attacks against Object Trackers (IEEE Security & Privacy 2025)

Skills

Computer Vision • Python • Leadership • Machine Learning • Research • C++

Honors and Awards

- Student Advisory Council Member, NSF AI Institute for Agent-based Cyber Threat Intelligence and Operation (ACTION) 2024-2025
- PhD Candidate Presenter at the Center of Academic Excellence in Cyber Research (CAE-R 2024)
- Selected for CPS Rising Stars 2024 (16.36% acceptance rate, April 8th, 2024)
- Emil Stefanov Memorial Fellowship (April 8th, 2024)
- National Security Innovation Network X-Force Fellowship (June 5th, 2023)
- Purdue University Graduate Teaching Award (April 15th, 2023)
- ISOC Symposium on Vehicle Security and Privacy Best Demo Award Runner Up (February 27, 2023)
- ISOC Symposium on Vehicle Security and Privacy Travel Grant Awardee (2023)
- General Motors Security AutoDriving Security Award (April 24, 2022)