

Andrei Cozma

Passionate Computer Scientist with expertise in Intelligent Systems and Machine Learning, committed to lifelong learning and innovation. I continually seek new skills and experiences to create cutting-edge solutions that address real-world problems and drive technological advancements.

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WORK EXPERIENCE

Graduate Research & Teaching Assistant

The University of Tennessee, Knoxville

01/2023 - Present

Knoxville, TN

- Conducted research on representation learning, computer vision, image processing, and reinforcement learning techniques in the AICIP research group under Dr. Hairong Qi, working on sponsored and personal projects.
- Collaborated with a start-up company to develop and deploy diffusion-based image generation techniques tailored for interior, architecture, and landscaping design (Summer 2023).
- Assisted students in their coursework, graded and provided constructive feedback on assignments, and held office hours in Dr. Catherine Schuman's Biologically-Inspired Computation course (01/2023 - 05/2023).

Software Development Engineer (Intern)

Zoom Video Communications

09/2022 - 12/2022

Knoxville, TN (Remote)

- Developed tooling to support security reviews by automating the discovery and visualization of business logic relations, including an Electron application using Quasar Framework with Vue.js and TypeScript in a NodeJS-based environment, interfacing with Atlassian Jira.
- Collaborated with cross-functional teams to ensure robust security postures for new features, participating in all phases of the software development life cycle, including requirements gathering, design, development, testing, and deployment.

Undergraduate Research & Teaching Assistant

The University of Tennessee, Knoxville

03/2021 - 08/2022

Knoxville, TN & Remote

- Conducted research on the adoption rates and timeliness of security patches in web development libraries, the dynamics of phishing blacklists, and the analysis of web security certificates to identify trends and common issues, contributing to a better understanding of web security practices (03/2021 - 10/2021 and 05/2022 - 08/2022).
- Assisted students in their coursework, graded and provided constructive feedback on assignments, and held office hours in Dr. Doowon Kim's Introduction to Cybersecurity course (01/2022 - 05/2022).

Software Development Engineer (Intern)

Elo Touch Solutions

01/2020 - 08/2021

Knoxville, TN & Remote

- Developed and maintained Elo's platform and software frameworks for enterprise touchscreen solutions, building on the Android Open Source Project (AOSP) and utilizing the Android SDK/NDK, Kotlin, Java, XML, RESTful services, and Git flow.
- Managed projects with BitBucket and Atlassian Jira, ensuring seamless integration and functionality of new features by collaborating with cross-functional teams, including hardware, software, and quality assurance, throughout all phases of the software development life cycle.
- Created and delivered demos to showcase new features, technological innovations, and proof of concept projects to customers and business partners, highlighting the capabilities of Elo's touchscreen solutions.

EDUCATION

Computer Science Ph.D.

The University of Tennessee, Knoxville

2024 - Present

Knoxville, Tennessee

- Concentration: Intelligent Systems & Machine Learning

Computer Science M.S.

The University of Tennessee, Knoxville

2022 - 2024

Knoxville, Tennessee

- Concentration: Intelligent Systems & Machine Learning (3.86 GPA).
- Thesis: "KIPPO - Koopman-Inspired Proximal Policy Optimization".

Computer Science B.S.

The University of Tennessee, Knoxville

2018 - 2022

Knoxville, Tennessee

- Honors: Summa Cum Laude (3.87 GPA); Chancellor's Honors Program
- Minors: Cybersecurity, Business Administration.

PROJECTS & PUBLICATIONS

"KIPPO - Koopman-Inspired Proximal Policy Optimization" (2024)

- Developed a novel RL framework that integrates Koopman Theory-inspired techniques with policy optimization, achieving significant improvements in performance and reduced variance across various continuous control benchmarks.
- Submitted to International Joint Conference on Artificial Intelligence (IJCAI 2025).

"Defect Detection in Tire X-Ray Images: Conventional Methods Meet Deep Structures" (2024)

- Introduced a hybrid approach combining traditional feature extraction and advanced machine learning techniques to improve the accuracy and reliability of automated defect detection in tire X-ray images.

"Cross-Scale MAE: A Tale of Multi-Scale Exploitation in Remote Sensing" (2023)

- Developed a self-supervised model leveraging Masked Auto-Encoder and scale augmentation to enhance remote sensing image analysis, achieving superior performance in downstream tasks.
- Accepted to Advances in Neural Information Processing Systems (NeurIPS 2023).

Smart Ledger (08/2021 - 05/2022)

- Created a shared spending web application utilizing ReactJS, Flask, MongoDB, Docker containerization, GitHub Actions CI/CD pipeline, and deployment to Amazon Web Services (AWS).

STEM (08/2020 - 12/2020)

- Contributed to the development of a Turing Machine simulator written in Java, used by UT professors to aid teaching about Turing machines.

ORGANIZATIONS

VolHacks Hackathon Leadership (04/2019 - 05/2022)

President, former Operations Manager for Sponsors & Organizer

Pi Kappa Phi Fraternity Leadership (08/2018 - 05/2022)

Chapter Secretary, Web Developer, Housing Manager