

# Ian Randman

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## EDUCATION

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Rochester Institute of Technology, Rochester, NY

**M.S., Computer Science (AI Cluster)**, May 2022, 3.86

**B.S., Software Engineering (Immersion in Science and Technology)**, December 2021, 3.88 (Summa Cum Laude)

## TECHNICAL SKILLS

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- Languages: Python, Java, MATLAB, C, C++, PHP, JavaScript, Ruby, HTML
- Machine Learning: PyTorch, TensorFlow, Keras, scikit-learn, pandas, NumPy, NLTK, Reinforcement Learning
- Databases: MySQL, Oracle, MongoDB, PostgreSQL, JanusGraph
- Tools & Other: OpenCV, Computer Vision, Flask, Spring, ORMs, Docker, Google Cloud, Project Management

## PROJECTS

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### Increasing Robustness of Monocular Depth

#### Estimation with Pictorial Cues (*capstone*)

Mitigate model overreliance on particular depth cues.

- Targeted shading, vertical position, and apparent size through data augmentations.
- Tools: PyTorch, OpenCV

### WebCheckers (*in class*)

Web-app to allow users to play checkers over a network.

- Followed Scrum methodology to provide four iterative releases.
- Provided documentation of project structure, including design decisions, UMLs, a domain model, statechart, and state diagrams.
- Wrote a minimax AI for the game.
- Tools: Java, JavaScript, CSS, HTML

### OURepository (*senior project*)

Web-app for researchers to share and perform object detection on images from unmanned aircraft.

- Provided method for training object detection model on arbitrary annotated imagery.
- Utilized research computing cluster.
- Redesigned existing web-app to provide controlled access to data.
- Tools: TensorFlow, React, PHP

### Reward Modeling from Human Preferences (*in class*)

Reproducibility study on learning the reward function for reinforcement learning guided by human feedback.

- Addressed agent alignment problem.
- Used advantage actor-critic (A2C) algorithm.
- Tools: OpenAI Gym, Keras, scikit-learn

## WORK EXPERIENCE

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AUTEL Automotive Intelligence, San Jose, CA

**Perception Software Engineer Intern** (August 2021 - December 2021)

- Developed script to evaluate sensor fusion output and created associated visualization.
- Investigated solutions to detect 3D bounding boxes from LiDAR point clouds to replace hand-labeled ground truth.
- Researched depth estimation techniques while using CARLA simulator as input.

Quantiply Corporation, San Jose, CA

**Software Engineer Intern** (July 2019 - December 2019)

- Developed RESTful API to store entities within banking system (customers, external parties, addresses, etc.).
- Implemented graph of these entities to gain insights of relationships.
- Developed processors to retrieve 3<sup>rd</sup>-party data for individuals and organizations in an automated data pipeline.

Rochester Institute of Technology, Rochester, NY

**Research Assistant** (May 2020 - December 2020)

- Used Grounded Theory to help develop understanding of attack surface of software applications.
- Assisted with coding Common Vulnerabilities and Exposures (CVE) in the context of Grounded Theory.
- Developed web-app to organize this coding.

Rochester Institute of Technology, Rochester, NY

**Academic Success Center Tutor** (August 2018 - May 2022)

- Worked with fellow students who need help with course material.
- Assisted with algebra, pre-calculus, calculus I and II, applied statistics, discrete math, physics I and II.

## ACCOMPLISHMENTS

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### Bike Ride from Florida to Alaska (2022)

Rode bicycle 6,500 miles and led the #1 fundraiser for Tackle Kids Cancer at over \$8,000.

### Boy Scouts of America: Eagle Scout (2017)

Lead 15+ volunteers to renovate a high school courtyard after raising ~\$6,000.