

Education

University of California, Berkeley CA, Aug 2019 – Jun 2023

B.A. Computer Science, GPA: 3.9

- **Relevant Coursework:** Data Structures, Artificial Intelligence, Machine Structures, Discrete Math & Probability, Computer Program Structure & Interpretation, Computer Algorithms

Projects

GAN-based anomaly detection, April 2021 –

- Research and reproduce the unsupervised methods of Generative Adversarial Networks based anomaly detection; Build and train several models that utilize normal samples only that are capable of detecting anomaly data
- Apply the model in industrial inspection including LED fault detection and chip-flaw recognition

Interactive Flock Simulator, Computer Graphics Project, April 2021 – May 2021

- Developed a 3D flock simulator that mimics the flying behaviors of birds using C++ with OpenGL; adopted Boid algorithm as the basis of movements and implemented a GUI based on nanoGUI that allows users to interact with the birds
- Received Honorable Mentions in class of CS184 in (Top 14 out of 70 projects)
- Deliverable: https://tianqiyang.github.io/Interactive-Flocking-Simulation-CS-184-Final-Project/final_implementation.html

Adaptive Potential Particle Swarm Optimization, Machine Learning Research, Jul 2018 – Jun 2019

- Proposed an improved algorithm on Particle Swarm Optimization, capable of classifying high-dimensional data with small training samples; The proposed algorithm makes use of ReliefF to reduce irrelevant features and follows an adapted way to select cut-points based on the feature size of the dataset to achieve higher average accuracy compared to the existed algorithms.
- Published on IEEE Congress on Evolutionary Computation 2019
- Deliverable: <https://ieeexplore.ieee.org/abstract/document/8790366>

China Two-child Policy Research, Shenzhen University, Jul 2018 – Dec 2018

- Gathered data sets which record the information of pregnant mothers from hospitals.
- Applied statistical methods to explore different factors that influence the expectancy of a second child in China; used weighted classifier ensemble of KNN, SVM, and Naïve Bayes algorithms to predict whether a family will bore a second child.
- Deliverable: <https://www.atlantis-press.com/proceedings/ssphe-18/55911795>

Deepjijkstra, Ludam Dare 48, Apr 2021

- Used Unity3D and C# to develop a 3D horror atmospheric game where player needs to go through a randomly generated maze to win; built the model of player and enemies and created the animation of their respective movements using Blender.
- ranked 48th out of 3866 teams in mood metric.
- Deliverable: <https://ldjam.com/events/ludum-dare/48/deepjijkstra>

Experience

Research Assistant, Oski Lab, Feb 2021 – Jun 2021

- Scraped information of 1m+ products and 10k+ stores at a commercial website protected by bot detection and mitigation services; use Puppeteer to control a headless browser and Tor to rotate IP addresses
- Deliverable: <https://oskilab.github.io/>

Skills

- Programming Languages: Java, Python, C, C#, C++, MATLAB, SQL, RISC-V, Scheme, HTML, Node.js
- Library/Framework: PyTorch, Gluon, MXNet, Hexo, Django, OpenMP, AVX
- Software: Adobe Premiere Pro, Blender, Unity3D