Yiming Chen

LinkedIn Profile

635 E 14th street Apt 08-A (917) 705-4352 danielatlas3455@gmail.com

EDUCATION

Georgia Institute of Technology Atlanta, Georgia
Master's Degree in Computer Science *Class of 2026*
New York University Manhattan, New York
Undergraduate Degree (Joint major in Computer Science and Mathematics) *Class of 2024*
Featured Courses: Theory of Probability (A); Algebra (A); Discrete Mathematics (A); Calculus III (A-); Linear Algebra (A-); Operating Systems (A); Computer Systems Organization (A); Basic Algorithms (A-); Data Structures (A-); Software Engineer(A); Data Management and Analysis(A); Computer Graphics(A); Natural Language Processing (A); Machine Learning (A-); Introduction to Robot Intelligence (A)

PROFESSIONAL EXPERIENCE

T.C.L. Industries Holdings **Shenzhen, Guangdong**
Deep Learning Algorithm Internship *Jun 2024 - Now*
The company is involved in various sectors, including electronics and technology innovation. The Phone Business Unit (BU) focuses on the international phone's supply chain operation

- Developed and fine-tuned deep learning models for sell-out prediction, increasing prediction accuracy from 40% to 90%
- Developed APIs for the model, making the model efficient to use internally and reducing costs by 35%
- Integrated the model into an application for Microsoft 365, enabling others to fine-tune different specific prediction models

International Collegiate Programming Contest (ICPC) Foundation Online
Programming Internship *Jun - Aug 2023*
The company organized a global programming competition for college students and provided internship opportunities to work on computer science, algorithms, and software engineering projects

- Optimized data structure implementations to improve runtime of statistical modeling algorithms by 15%
- Taught core algorithms and data structures to 50+ students in ICPC OTCP masterclass, explaining solutions to past contest problems
- Received positive feedback on teaching clarity and ability to illustrate complex algorithms simply

Shenzhen Huafu Information Technology Co., Ltd. Shenzhen, Guangdong
Software Engineer Internship *Jun - Aug 2021*
The company engages in industries such as network program platforms and algorithm platforms

- Self-learnt Springcloud, Springcloud-Alibaba, Sentinel, Mybatis-Plus, Redis, RDM, and AOP with Spring, gaining proficiency in developing software
- Conducted integration testing and debugging for airport access system, resolving 30+ defects and reducing customer complaints
- Automated API testing, improving code coverage from 60% to 90% and catching defects early

Shenzhen Ningqu Technology Co., Ltd. Shenzhen, Guangdong
Software Engineer Internship *Jun - Aug 2020*
The company engages in the network education industry, products include a technological pen that can transmit data

- Self-learnt Springboot, Mybatis, Node.js, and Thymeleaf to set up the software
- Built real-time visualization dashboard for teachers to monitor up to 300 connected smart pens simultaneously

RESEARCHES AND PROJECTS

CSG-Based ML-Supported 3D Translation of Sketches into Game Assets for Game Designers
Developed a Unity-based project that utilizes Constructive Solid Geometry (CSG) techniques to transform 2D sketches into 3D objects *May 2023 - now*

- Developed algorithms to interpret hand-drawn sketches and convert them into 3D building models using CSG, improving automation by 40%

- Implemented machine learning techniques for edge detection and point decimation, identifying lines, arcs, and intersections to transform them into CSG primitives
- Integrated the diffuser model for texture generation, enhancing the visual quality and realism of the generated 3D assets
- Optimized model refinement techniques to reduce rendering time of complex structures by 20%
- Awarded NYU DURF $1,100 grant to support research on integrating ML and procedural modeling techniques for game design
- Co-authored a paper currently under review by "The Visual Computer" journal, with myself as the first author

Unity ML-Agents with Walking Robot using Curriculum Training

Implemented curriculum training using Unity's ML-Agents toolkit to progressively train an AI agent for enhanced walking and navigation in complex environments

Mar - May 2024

- Developed a phased training approach to improve agent navigation, balance, and obstacle avoidance using the Proximal Policy Optimization (PPO) algorithm
- Implemented ray perception for the agent to detect and avoid obstacles, enhancing its navigation capabilities
- Optimized neural network architectures and hyperparameters to achieve faster convergence and improved performance

Machine Learning and Natural Language Processing based Sentiment Analysis with respect to Transformative Music

Conducted research combining ML and NLP to draw new insights to understand transformative music

Nov - Dec 2023

- Analyzed songs using natural language processing to model emotional dynamics conveyed in lyrics
- Identified patterns in language usage and musical elements that were highly predictive of sentiment outcomes
- Developed classifier connecting linguistic aspects and audio features to a piece's psychological effects
- Created novel methodology for quantifying how different song components interact and impact listener emotions

Night Walker with Raspberry Pi-Controlled Viam Rover

Led a groundbreaking robotics project developing the Night Walker Robot, designed for autonomous navigation in low-light conditions *Nov - Dec 2023*

- Updated and trained the TensorFlow Lite model (obj-det.tflite) based on specific datasets and bounding boxes for optimal autonomous navigation
- Deployed the TensorFlow Lite ML model using Viam's vision service as a detector for the Night Walker Robot's autonomous navigation
- Addressed limitations, including challenges in extremely dark conditions and real-time adaptability, highlighting the need for ongoing refinement and consideration of deployment scenarios

Object Tracking with Raspberry Pi-Controlled Viam Rover

Led a robotics project that involves the utilization of a Viam Rover, controlled by a Raspberry Pi, to perform various tasks, notably object tracking based on color recognition *Sep - Oct 2023*

- Customized computer vision algorithms for real-time color detection and tracking using OpenCV and Python
- Programmed Raspberry Pi to control rover movement and camera direction, achieving smooth pursuit of target objects
- Integrated components for seamless mapping, localization and navigation in dynamic environments

Language Translation Software Development

Language translation software for English learners *Sep - Dec 2022*

- Built full-stack web application with React and Node.js and deployed it on DigitalOcean cloud server
- Integrated OpenAI API for AI-powered language translations supporting text and voice
- Enhanced chatbot conversational flows focusing on common English learner queries

Patent on "A Device for Compressing Garbage in Dustbin"

Patent certificate NO.: 1081734 *Jul 2018 - Aug 2019*

- Designed and built prototype for novel device that automatically compresses waste in dustbins, reducing need for plastic bin liners by over 50%
- Identified unmet need for waste compaction in consumer settings
- Filed and obtained patent demonstrating innovative problem-solving skills
- Nominated for China Science and Technology Innovation and Invention Achievement Award at the Chinese Scientists Forum, validating global innovative potential

ACHIEVEMENTS/AWARDS

- Top 20% of the world mathematics competition in Waterloo, Canada *2018*
- Piano Grade 8 Certificate *2016*

TECHNICAL PROFICIENCIES

- Programming Languages: Java, Python, C, C#, SQL, HTML, JavaScript, CSS, JQuery
- Develop Framework: Springboot, SpringCloud, Thymeleaf, Flask, Bootstrap, Docker, Unity, Mybatis, Mybatis-Plus, OpenCV, Pandas, Pytorch, Tensorflow, Numpy
- Database Familiarity: MySQL, MongoDB, Redis