Ray Chen

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EDUCATION

University of Washington   Seattle, WA
Master of Science in Electrical and Computer Engineering   *Sep 2022 – Jun 2024 (Expected)*
- **Relevant Coursework:** Computer Vision, Data Science, Database Systems, Probability Theory, Machine Learning

The Ohio State University   Columbus, OH
Bachelor of Science in Physics and Astronomy   *Aug 2018 – May 2022*
- **Relevant Coursework:** Statistics, Linear Algebra, Differential Equations, Data Science, Quantum Computing

EXPERIENCE

Airbus Robotics (MTM Robotics)   Seattle, WA
Software Design Engineer   *Jan 2023 - Jun 2023 (Expected)*
- **Objective:** Developed an iOS Application for LiDAR-based 3D Scanning and Augmented Reality
- Implemented LiDAR-based scanning functionality to capture object details accurately. Developed an efficient pipeline to convert the scanned data into high-quality 3D models.
- Integrated AR capabilities to anchor 3D models in precise locations within the physical environment. Implemented robust anchoring functionality, utilizing reference points and calibration techniques to ensure accurate placement.
- Utilized human-computer interaction principles to design intuitive and user-friendly interfaces. Incorporated user-centered design methodologies to ensure a seamless and engaging user experience. In this way, it can dramatically increase the efficient of work.

Ohio State University, Department of Astronomy   Columbus, OH
Teaching Assistant of Astronomy 1221: Astronomy Data Analysis and Visualization   *Jan 2022 - May 2022*
- Created and evaluated Python data analysis exercises for a class of 60 students, focusing on enhancing their data analysis and visualization skills in astronomy.
- Held tutoring sessions and provided guidance to students on fundamental data science topics such as NumPy, Statistics, and data visualization techniques specific to the field of astronomy.
- Coordinated the class schedule and resolved academic misconduct conflicts. Developed rubrics for NumPy assignments to ensure fair evaluation and grading consistency.

NR Electric Co., Ltd (State Grid Electric Power Research Institute)   Nanjing, China
Electrical Computer Engineer Intern   *May 2021 - Aug 2021*
- Debugged relay protection equipment, including single boards, whole machines, and cabinets. Automated the process of writing programs into microcontroller units using C++, improving time efficiency by 30%.
- Conducted substation tests and acceptances with the manager, developing and researching an automatic Linux program for checking the status of relevant procedures, including testing airtightness, detecting gas and liquid leaks, and checking protective gas.

RESEARCH & PROJECTS

Computer Vision Project: Aircraft Model Identification   UW, Seattle, WA
Objective: Designing a machine learning model to accurately identify aircraft models from image data   *Mar 2023 - Jun 2023*
- Explored and implemented four machine learning models, including a linear support vector machine classifier, a fully connected neural network, a convolutional neural network, and transfer learning, for the task of aircraft model identification. Conducted extensive training of the models using various rules and learning rates to optimize performance.
- Achieved an impressive test accuracy of 33.75% using transfer learning, outperforming the other models in accurately identifying aircraft types. By performing meticulous comparison and analysis of the models' results to identify the most accurate model for aircraft model identification.
- Contributed to the optimization and practical applications of the model, such as leveraging the results for improving urban planning and managing passenger traffic effectively.

- **Webdesign Project of building Ecommerce sites**   UW, Seattle, WA
  Objective: Using HTML, CSS, JS, and SQL to create an interactive friendly website.   *Mar 2023 - Jun 2023*
  - Created responsive and user-friendly front-end interfaces using HTML and CSS, prioritizing cross-browser compatibility and mobile responsiveness to deliver a seamless user experience.
  - Implemented client-side JavaScript to elevate interactivity and enhance user experience. Incorporated dynamic content loading and form validation to ensure smooth data handling and error prevention.
  - Leveraged server-side JavaScript to manage business logic and establish secure and efficient database interactions. Employed best practices for data management, contributing to robust and reliable data storage and retrieval.
  - Designed and implemented a scalable SQL database schema, optimizing data storage and retrieval for efficient querying. Ensured adherence to industry standards and implemented measures to support future scalability.

- **User Interface and Database Development for Vaccinations Scheduler**   UW, Seattle, WA
  Objective: Optimize user experience through HCI principles and secure data in SQL techniques   *Jan 2023 - Mar 2023*
  - Led the development of a user interface and an sql database server for a vaccinations appointment scheduler, aimed at linking and tracking multiple objects with minimal vision requirements.
  - Designed and implemented various functionalities for patients and caregivers, including searching, reserving, and managing vaccine slots and inventory. Created intuitive and user-friendly interfaces to enhance the user experience.
  - Implemented salting hashes technique to securely store passwords in the database, prioritizing data privacy and security for all system users.

- **Fish Real-time Multi-object Tracking by NOAA**   UW, Seattle, WA
  Objective: Link and track multiple objects with minimum vision requirements   *Sep 2022 - Dec 2022*
  - Used LabelMe to mark down all the fish in the video and used machine learning link projections, for further visualization of the data.
  - Evaluated the efficiency of the current method and optimized fish tracking using DeepSort and human position gesture detection methods.

- **Daylighting Performance of Sunlight via POF**   North China Electric Power University, China
  Objective: Analyze the performance of daylighting systems via fibers.   *Dec 2021 - Apr 2022*
  - Performed simulation in TracePro, using the simulation result to calculate light transmission attenuation rate, luminous intensity, and infrared light filter rate to compare theoretical model with real performance.
  - Evaluated the cost-efficiency of the daylighting system and artificial light using the simulation model.
  - Accepted by the International Conference on Computing Innovation and Applied Physics (CONF-CIAP 2022).