

Ronald Tsai

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EDUCATION

Purdue University

Aug. 2023 – Dec. 2026

Bachelor of Science in Computer Science

West Lafayette, IN

Bachelor of Arts in Linguistics, Minor in English

- **Relevant Coursework:** Object-Oriented Programming, Programming in C, Discrete Mathematics, Data Structures & Algorithms, Computer Architecture, Systems Programming, Numerical Methods, Fundamentals of Computer Graphics, Introduction to Computational Linguistics, Linear Algebra, The Data Mine Seminar

EXPERIENCE

Purdue University – The Data Mine Corporate Partners

Jan. 2025 – Present

Teaching Assistant/Project Manager

West Lafayette, IN

- Execute Agile methodology and communicate between student developers and corporate partners
- Leading a team to develop a weather-aware supply chain model for Costco's crop transportation logistics
- Led 10 students to develop a predictive model of supplier disruptions for Caterpillar Inc. by comparing time series forecasting models, fitting the best model to supplier data, and visualizing the insights via a Power BI dashboard

Language Learning and Meaning Acquisition Lab

May 2024 – Present

Research Assistant

West Lafayette, IN

- Collaborating on a morphosyntactic network analysis using large datasets of language transcripts to advance the understanding of developmental language disorder in children
- Adapting open-source NLP libraries specifically for young children's speech to automatically tag morphological and syntactic dependency relations between words
- Programmed in R, Python, and C/C++ to develop phonological networks to investigate correlations in children's vocabulary development based on various word-similarity metrics

PROJECTS

Taiwanese Hokkien Educational Tool | *Python, JavaScript, React, Node.js*

Aug. 2025 – Present

- Developing a full-stack interactive web application to teach the Taiwanese Hokkien language
- Implementing back-end open-source translation and speech synthesis models and a front-end React user interface

What's Up Boiler Up | *Python, HTML/CSS, React, Node.js*

Sep. 2023 – Present

- Co-developed a full-stack web application using an event listing page's RSS feed to help students find upcoming events on Purdue University's campus through an interactive map
- Created the user interface using React and used Python to integrate the mapping features based on web-scraped geographic data

Share Food Share Love Inventory Dashboard | *React, MERN Stack*

Sep. 2024 – May 2025

- Co-developed a user-friendly dashboard to support the inventory management of a local food pantry
- Implemented data visualizations for the user interface and querying features to manage inventory logs

NivelMate - AI Essay Grader | *Python, JavaScript, React, Next.js*

March 2024

- Collaborated on an AI essay grader that evaluates essays based on a pre-trained NLP model
- Used React for page navigation and ensured reliable front-end to back-end communications for API calls

TECHNICAL SKILLS

Languages: Java, C/C++, C#, JavaScript, Python, R, HTML/CSS, x86-64 Assembly, MATLAB, Bash

Developer Tools: Git, Unix, Vim, VS Code, Visual Studio, IntelliJ, Eclipse, Jupyter Notebook, RStudio

Libraries: pandas, NumPy, Matplotlib, Hugging Face

Frameworks: React, Next.js, Tailwind CSS