

# Alex Liu

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## EDUCATION

**Purdue University** West Lafayette, IN  
B.S. Computer Science

**GPA: 4.0**  
Expected Graduation: May 2025

## PROJECTS

**Nighttime Semantic Segmentation** | *Python, Data Augmentation, Google Colab, Domain Adaptation* Jan. 2023

- Created and designed an enhanced instance-level data augmentation based algorithm in Python, published conference research in ACM ICMLSC Proceedings
- Trained a domain adaptation network with my augmented Cityscapes and Dark Zurich datasets
- Increased nighttime pedestrian recognition by 4.52% compared to state-of-the-art performance (21.12%→25.64%)
- Won "Best Oral Presentation" at the International Conference for Machine Learning and Soft Computing 2023

**FridgeGPT** | [GitHub](#) | *React, Node.js, Express, JavaScript, OpenAI API* May 2023

- Full-Stack application that takes leftover ingredients as a natural language input and generates recipes
- Configured Node.js and Express backend to create API endpoints while React front-end handles form submit
- Integrated OpenAI API to model chat completion responses that route to server API

**SpotiFind: Find New Releases** | [GitHub](#) | *Python, Flask, OAuth 2.0, Spotipy* July 2023

- Automated Flask application utilizing Spotify Web API to automatically find and compile a playlist of new personalized released songs by parsing artists the user follows
- Enhanced security by using OAuth2 endpoints to authorize and authenticate user's Spotify account

## EXPERIENCE

**Bit Coding Academy** Aug. 2021 – Present  
*Co-Founder* Erie, PA

- Started a 501(c)(3) non-profit organization that taught free programming lessons to 200+ elementary students
- Created a Scratch curriculum with interactive lessons and projects
- Expanded chapters to OH and NY, recruited and managed a team of 50+ volunteers with weekly collaborations
- Organized activities and weekly after-school lessons for 75+ middle school students

**Steel City Codes** Aug. 2020 – May 2023  
*Regional Director and Curriculum Director* Erie, PA

- Hands-on developed a Java Curriculum for the non-profit used by 10,000+ students nationwide
- Hosted a week-long free summer camp workshop for underrepresented students across Northwestern PA

**Big Orange** Feb. 2023 - Aug. 2023  
*Part-Time* Seattle, WA

- Sales, accounting, inventory management, and customer service

## PUBLICATIONS

- Liu, Alex, and Zhifeng Xiao. 'Nighttime Semantic Segmentation with Instance-Level Data Augmentation: A Case Study of the Dark Zurich Benchmark'. Proceedings of the 2023 7th International Conference on Machine Learning and Soft Computing, Association for Computing Machinery, 2023, pp. 175–180, <https://doi.org/10.1145/3583788.3583814>. ICMLSC '23.

## TECHNICAL SKILLS

**Languages:** Python, Java, C/C++, JavaScript, HTML, CSS

**Frameworks/Libraries:** React, Node.js, Express, MongoDB, Flask