

# RYAN HEISE

Austin, TX

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## Education

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### Purdue University

August 2020 – December 2024

B.S. in Computer Science & Minor in Mathematics

West Lafayette, IN

**GPA: 3.5/4.0**

**Relevant Coursework:** Data Structures & Algorithms, Analysis of Algorithms, Operating Systems, Compilers, Systems Programming, Computer Security, Statistical Machine Learning (Graduate)

## Experience

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### Web Developer (Contract)

March 2025 - April 2025

Melody Drive-in Theater | Knox, IN

Python, React, AWS

- Modernized the Melody Drive-In website with a refreshed design and fully responsive mobile user interface
- Implemented a Django based content management system enabling non-technical owners to update content in real time
- Deployed to AWS EC2 to serve 10,000+ weekly users with reliable performance

### Undergraduate Teaching Assistant (CS 252)

January 2023 - May 2023

Purdue University | West Lafayette, IN

C++, C, LaTeX

- Led two weekly lab sections for systems programming where I helped students with projects (malloc, shell, web server), coaching students through debugging, memory issues, and performance bottlenecks in C/C++
- Developed and refined assignments and exam material to improve comprehension of core systems topics

### Software Engineering Intern

May 2022 - August 2022

CACI | Lisle, IL

Python, C, PostgreSQL

- Deployed honeypot infrastructure to collect real world intrusion traffic, enabling large scale behavioral analysis
- Built a packet processing and feature extraction pipeline for over 100M+ packets, transforming raw network captures into ML ready datasets
- Implemented network isolation for malware analysis using linux routing and iptables in order to reduce risk

### Software Engineer (Co-Founder)

August 2020 - August 2021

Youndle LLC | Valparaiso, IN

Python, JavaScript, Django, React

- Developed a React and Django app streamlining communication between small businesses and teenage workers
- Designed and deployed production infrastructure on AWS (EC2 and RDS/PostgreSQL)
- Selected for Purdue Boiler 2021 accelerator, iterating MVP features and validating market fit

## Projects

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### Clipy: An Automated Shorts Editor | Python, PyTorch, FFmpeg

April 2025

- Built an end-to-end automated deep-learning video editing pipeline that generated 200,000+ YouTube views
- Integrated Whisper and active speaker detection models to segment dialogue, track active speakers, and automatically produce short form cuts suitable for social platforms

### Secure Voting System | Python, Cryptography

October 2024

- Designed a modular election system using homomorphic encryption for secure local vote tallying
- Utilized digital IDs and asymmetric cryptography for end to end verifiability, privacy, and scalability

### Heise Powless Pickem | Python, Javascript, RestAPI

August 2024

- Developed a React web app that integrated with a custom REST API to manage an annual football league
- Implemented a complete token based authentication system for managing user accounts and dynamic user data

### Mini Java Compiler | C++, Lex, Yacc

May 2023

- Built a compiler translating a Java subset to optimized 32 bit ARM assembly using Lex and Yacc for AST construction
- Abstracted parsing into modular classes for efficient, maintainable code generation

## Technical Skills

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**Languages:** Python, C++, C, JavaScript, Bash, Java

**Technologies/Frameworks:** Linux, Git, Django, React, PostgreSQL, AWS, PyTorch, NumPy, Pandas, Nginx

**Awards & Certifications:** AWS Partner Technical Accreditation; 1st Place Purdue Hello World Hackathon (Out of 55); Dean's List; Semester Honors