

# Gunnar Knox

Madison, WI

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## Education:

**Bachelor of Science, Computer Sciences**  
University of Wisconsin-Madison

May 2025

## Projects:

**Multiplayer Web App Board Game** | Java, JS, MySQL, Python

January 2024 - Present

- Personal interest project
- Created a full-stack online board game based on Monopoly
- Implemented real-time gameplay using WebSockets and cloud hosting for peer-to-peer interaction
- Designed a Java Spring backend to handle game state and turn logic, integrated with a React frontend
- Trained ML models to act as beginner and advanced additional players

**BetTheBracket - March Madness Betting Website** | Java, JS, MySQL

Spring 2025

- Led backend development while acting as scrum master for a 6-person team
- Built REST APIs for bets, payouts, odds fetching, secure authentication and user operations
- Integrated 3rd-party data to update real-time odds and bracket outcomes
- Deployed backend to team's VM via Docker
- Provided weekly reports to superiors relating to the team's progress and next steps

**Image Upscaler** | Python

Fall 2024

- Developed and trained a Generative Adversarial Network(GAN) to increase image resolution
- Collaborated with small team on model architecture, preprocessing, training pipeline and presentation
- Used Python and ML frameworks such as TensorFlow and PyTorch
- Achieved measurable success in improving image quality above baseline

**Social.ly - Business Connection App For Events** | Kotlin, NoSQL

Spring 2024

- Built an Android app pairing event attendees for short networking sessions using geolocation + NFC
- Utilized FireBase/FireStore for authentication handling and data storage
- Designed algorithms for matching, authentication, session timing, and admin tools

## Skills:

**Languages** - Java, JavaScript, Python, Kotlin, C, C++

**Frameworks** - Spring Boot, React, TensorFlow, PyTorch

**Web & Backend** - REST, WebSockets

**Database** - SQL, NoSQL

**Other** - GIT, Bash, Docker, Postman

## Work Experience:

**Research Assistant** | University of Wisconsin-Madison

April 2021 - Present

- Support and perform research in a plant genetics laboratory
- Perform lab work involving RT-PCR disease testing, tissue culturing, and lab/greenhouse management
- Developed and optimized a PSTV-d testing protocol; greatly improving the efficiency of earlier techniques
- Co-authored and recognized on a 2024 publication relating to the PSTV-d testing protocol
- Consistently assigned increased responsibilities supporting multiple projects and principal investigators

**Landscaper** | College Summer Employment

April 2020 - August 2023

- Performed a wide variety of landscaping tasks for Madison area homeowners
- Customer reviews consistently commented on high-quality work and professional attitude
- Multitasked and worked effectively with team members, paid meticulous attention to detail

## Publication:

"Utilization of reverse transcription quantitative PCR as a screening tool at the UW Potato Genebank to detect Potato Spindle Tuber Viroid;"  
Proceedings of the Potato Association of America 108<sup>th</sup> Annual Meeting, July 2024