

# Donnie Winkelman

[dwinkelman@umass.edu](mailto:dwinkelman@umass.edu) | (512) 705-6738 | [linkedin.com/in/dmwink](https://www.linkedin.com/in/dmwink) | [github.com/TheWelcomer](https://github.com/TheWelcomer)

## TECHNOLOGIES

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**ML/Deep Learning:** PyTorch, TensorFlow, HuggingFace, LangChain, W&B, RAGs, LLMs, ConvNets, Mamba  
**Data Science:** NumPy, Pandas, Sklearn, Mechanistic Interpretability, Feature Visualization, Integrated Gradients  
**Languages:** Python, TypeScript/JavaScript, SQL, C/C++, Java, C#, Swift  
**Web/Cloud:** Linux, Docker, React, Next.js, Node.js, AWS, gRPC, Sockets, PostgreSQL, Tailwind, Svelte, Express.js  
**Methodologies:** Agile/Scrum, CI/CD, Kanban, Research Design

## EDUCATION

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**University of Massachusetts Amherst** GPA: 3.9  
*M.S. Computer Science – Specialization in Data Science and Machine Learning* Jan. 2025 – Dec. 2025  
– Relevant Coursework: Distributed Systems, Data Science for Decarbonization, Natural Language Processing  
**University of Massachusetts Amherst** GPA: 3.8  
*B.S. Computer Science* Sep. 2022 – Dec. 2024

## EXPERIENCE

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**MassAI | Website | Public Resources** Amherst, MA  
*Co-President, Events and Marketing Coordinator* Aug. 2024 – Present  
– Pioneered [20+ club-led projects](#) while personally leading 2 teams, engaging 100+ students in hands-on development  
– Led recruitment and onboarding of 18 events, marketing, project, web, and treasury coordinators to our E-board  
– Implemented [umassai.com](#) with SvelteKit, Tailwind, and Google Calendar API integration, achieving 600+ MAU  
– Founded and led weekly [research reading group](#), [hands-on ML workshops](#), [club collaborations](#), and [competitions](#)  
– Developed automated pipelines for lecture recording and distribution, mailing list management, and record keeping  
**Secure, Private Internet (SPIN) Research Group | Poster | Github** Amherst, MA  
*AI Safety Researcher* Dec. 2024 – Feb. 2025  
– Built and implemented NSFW content filtering system for text-to-video prompts using phi4 and Deepseek-R1  
– Analyzed 432 prompts, finding temporal risk filter gap (93% accuracy on non-temporal vs 61% on temporal risks)  
**UMass Computer Science Department | Paper | GitHub** Amherst, MA  
*Research Assistant* Aug. 2024 – Dec. 2024  
– Led study revealing VGG16 develops progressive feature complexity with distinct pattern recognition  
– Co-authored research showing Mamba’s in-context learning improved accuracy by up to 40% on synthetic OCR  
– Identified sentiment detection limitations using integrated gradients, revealing key factors in false classifications

## PROJECTS

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**BeatCode.dev | SvelteKit, FastAPI, PostgreSQL, WebSockets | Demo | GitHub** 2024  
– Built competitive coding platform with 900+ registered users using JWT auth and WebSocket state management  
– Implemented real-time code execution with test case evaluation, sabotage abilities, and ELO-based ranking  
**Self-Driving Car Vision | PyTorch, Computer Vision | Demo | GitHub** 2024  
– Trained ResNet model on 11,110-image dataset to predict vehicle positioning, increasing test accuracy by 1,300%  
– Engineered data augmentation pipeline, reducing overfitting and resolving gradient instability issues  
**ClubberNaut | React, Next.js, Supabase | GitHub** 2024  
– Built full-stack platform with REST API endpoints to support UMass club community  
– Led 7-person Agile team through implementation of authentication, club creation/discovery features  
**UMass CLog | React Native, Supabase, BeautifulSoup | Demo** 2023  
– Developed personalized healthcare app analyzing 200+ ingredients with 37 attributes to predict IBD trigger foods  
– Implemented automated data extraction system and real-time symptom tracking

## AWARDS & RECOGNITION

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**Best AI Hack**, HackHer413 (2025) | [Demo](#) | [GitHub](#) – Find a seat at Worcester gym and agents for the MassAI RLympics  
**Best Healthcare Hack**, HackUMass (2022) | [GitHub](#) – UMass SAFER meal ordering service, reduced processing time by 1,200% and added allergy-based filtering for users with food allergies; later integrated into [UMass Dining App 2.0](#)  
**Earned all 137 merit badges**, Scouts BSA (2021) – Achieved by <500 scouts globally, Eagle, 600+ volunteer hours