Evan M. Matthews

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Education

University of Illinois Urbana Champaign

M.S. in Computer Science — May 2025, 3.62 GPA

B.S. in Computer Science + Music — May 2023, 3.76 GPA

Projects and Research

3D Acoustic Room Rendering Environment (3DARRE) — February 2025 – Present

- Coordinated development of Python simulation software for use in university-level acoustics courses
- Presented goals with interior design professionals to develop intuitive software

Thesis: Text Recaptioning for Audio Diffusion Models — June 2024 – May 2025

- Implemented a pipeline using PyTorch and HuggingFace to analyze similarity in AI model outputs
- Dissected 4,000 text prompts and audio files with 40+ hours of experiments on Linux GPU server

CLAIP: Output Comparison on Features of Differing Modalities — March – May 2025

- Pioneered a prompt-driven network pair with HuggingFace to compute audio/image similarity scores
- Collaborated with computer vision researchers to implement state-of-the-art methods in audio context

Analyzing and Deteching Lighting Inconsistencies in AI-Generated Images — March –May 2024

- Designed a physics-driven pipeline using PyTorch to detect shading anomalies in AI-generated images
- Organized 30+ hours of experiments with a quick project turnaround

A Case for Bayesian Grading — March – May 2024

- Incorporated Python, Matplotlib and UIUC CS course data to simulate per-student cheating probabilities
- Assisted an existing team on a new research topic through weekly meetings
- Oversaw paper editing and acceptance to SIGCSE 2024 Virtual Conference

Nearest Neighbor Classification for Classical Image Upsampling — November – December 2023

- Strengthened an machine learning method for increasing picture resolution using PyTorch and OpenCV
- Expanded on viability of alternative upsampling methods for improved image quality

Capstone: Transcribing Monophonic Audio with Deep-Learning Data — January – May 2023

- Established and ran a data-collection pipeline for score-conditioned singing audio with 30+ volunteers
- Presented technical work in engineering and music communities, receiving $500 in project funding

Digital Instrument for Sound Synthesis and Composition (DISSCO) — September 2021 – May 2022

- Rewrote and adapted 15 years of C++ code for new Linux server, modern operating systems and 100+ users
- Volunteered 20 hours/week programming for the National Center for Supercomputing Applications

Pan-Lang — September 2020 – January 2021

- Designed an online platform using Javascript and Google Translate API to convert food pantry inventories
- Implemented software locally, benefiting hundreds of customers in a Champaign food pantry

Experience

Teaching Assistant, Siebel School of Computing and Data Science January 2022 – May 2025

- Established a GitHub course management system to handle large Audio Computing class and auto-grading scripts
- Supervised undergraduate staff and held office hours totalling 800+ attendees for Systems Architecture course
- Guided students on modern methods in graduate-level Machine Learning course

Session Chair, CSLSC 2025 November 2024 – February 2025

- Coordinated and hosted a technical conference session with several travelling research professionals
- Judged and awarded student technical presentations, attended weekly organization meetings

Chair, ACM SIGMusic August 2023 – December 2024

- Committed 20 hours/week to engaging community in signal processing topics and planning weekly lessons
- Initiated development of audio production software and presented updates for $1000+ funding

Treasurer, ACM at UIUC May 2022 – May 2023

- Changed financial system to be online while managing $250,000+ in assets and 2 student conferences
- Developed a year-long club room renovation initiative, deep-cleaning and overhauling spaces with new furniture
- Attended weekly, bi-weekly executive meetings to discuss and approve new organization projects and funding

Undergraduate Advocate, School of Music Student Advisory Board August 2021 – May 2023

- Coordinated new policies benefiting the music community (career week, vending machines, mental health day)
- Advised school director on requests and issues by reaching out to music technology students and faculty

Product Manufacturer, Haken Audio November 2021 – August 2022

- Built and tested over 70 keyboards and synthesizers for award-winning electronic music company
- Facilitated new work procedures, increasing efficiency and reducing waste during manufacturing process

Social Committe Chair, ACM at UIUC January 2022 – May 2022

- Planned and executed 15+ club recuitment events- despite emergencies- totalling 4,000+ attendees
- Mentored students in adaptive and broad-impact leadership skills, including 7 current/former club leaders

Technical Skills

Languages: Python, C/C++, Java, Javascript, OCaml, SQL, LaTeX
Libraries and Tools: PyTorch, SKlearn, Scipy, Pandas, Matplotlib, Git/GitHub, GCP, AWS, Linux, Docker
Other: Mojo, Bend, Vim/NeoVim, VS Code, Zed, Cursor, PyCharm, IntelliJ