Nicolas Ranabhat

+1 608-225-0028 | nicoranabhat@gmail.com | linkedin.com/in/nranabhat | github.com/nranabhat

Education

University of Wisconsin - Madison **Madison, WI**
- M.S. Electrical and Computer Engineering, Machine Learning & Signal Processing — Sep. 2023 - Sep. 2024
- GPA: 3.93/4.0

University of Wisconsin - Madison **Madison, WI**
- B.S. Engineering Physics, minors in Computer Science and Physics — Sep. 2019 - May 2023
- GPA: 3.83/4.0, Dean's Honor List 8 semesters

Experience

SideShift **Madison, WI**
Machine Learning Engineer October 2024 - January 2025
- Built an AI-powered search tool that uses context-aware prompts to improve user experience and deliver accurate and robust search results.
- Built a job-candidate matching system using AI to improve recruitment accuracy and efficiency.
- Automated deployment and data storage processes to ensure seamless system performance and scalability.

Applied Research Associates **Greenville, SC**
Data Science and Robotics Intern June 2024 - Sep. 2024
- Worked closely with three scientists to develop experimental prototypes to support proof of concept demonstrations and guide direction for progressing technologies through product development phases.
- Optimized an audio-based drone classification pipeline, modeled a robotic arm's gripper joint dynamics, and optimized the software package for a vehicle simulator.

UW-Madison, Department of Physics **Madison, WI**
Research Assistant Sep. 2021 - May 2023
- Independently conceived and executed a novel approach to atomic clock optimization, developing a feed-forward neural network that improved state estimation by 25% compared to traditional least-squares methods.
- Utilized Python and Weights & Biases (Wanb) experiment tracking to develop and optimize all aspects of the ML pipeline, from data acquisition to testing. Recognized as a top 5% active user of Wanb in 2022.
- Authored a detailed 43-page thesis and presented findings to stakeholders. Awarded $4000 in fellowships.

UW-Madison, Department of Surgery **Madison, WI**
Research Assistant Sep. 2020 - Sep. 2021
- Collaborated with an interdisciplinary team to automate laryngeal pathology diagnosis, analyzing 3D dynamics of vocal folds for improved diagnostic accuracy.
- Developed a GUI to analyze video input, enabling precise spatio-temporal tracking of point features.
- Authored an in-depth review of six different high-speed imaging techniques within the field.

Skills

- **Programming Languages:** Python, C++, Java, MATLAB, SQL, TypeScript, JavaScript
- **Software and Tools:** Git, Docker, Firebase, Wandb, CUDA, Linux, Raspberry Pi, ROS, MoveIt
- **Libraries:** PyTorch, OpenCV, Huggingface, Pandas, SciPy, Sklearn, Matplotlib, Seaborn

Projects

- **FloraFacts - AI-Powered Plant Identification Web App** | *Node.js, TypeScript, Google Gemini API, Vercel*
- **DynamicZoom - Real-time Video Resolution Enhancement** | *PyTorch, OpenCV, CUDA, Git*
- **ChessBot - Chess Playing Robotic Arm** | *Raspberry Pi, Python, ROS, RVIZ, SciPy, Linux*
- **CornCount - Automated Corn Kernel Analysis System** | *Mathematica, OpenCV*

Activities

- Pro ultimate frisbee player, president of UW-Madison's frisbee club, nominated MVP of College Ultimate 2023.