

HARRISON SUN

Machine Learning Engineer

✉ harrison@hlsun.dev ☎ 626-297-8434 📍 California, USA 🌐 hlsun.dev 💼 harrisonlimsun 🏠 harrisonlsun

EDUCATION

M.S. in Electrical and Computer Engineering
Concentration in Machine Learning and Computer Vision

Northeastern University

📅 September 2023 – May 2024 📍 Boston, MA
• Professor Arvin Gabel Memorial Scholar, GSE Dean's Scholar

B.S. in Electrical and Computer Engineering

Northeastern University

📅 September 2018 – May 2023 📍 Boston, MA
• Electrical and Computer Engineering Peer Mentor
• College of Engineering Co-op Award, First Place Senior Capstone (ECE)

WORK HISTORY

R&D Engineer, Co-op

Hologic, Inc.

📅 January 2021 – August 2021 📍 Marlborough, MA
• Proposed and researched an innovation project based on marketing considerations and engineering feasibility
• Liaised with team members in China and Costa Rica to support the global release of capital equipment
• Developed test procedures for FDA, NMPA, and MDR responses

RESEARCH

Research Engineer, Traverso Lab

Brigham and Women's Hospital and MIT

📅 January 2022 – April 2024 📍 Cambridge, MA
• Investigated the integration of multimodal biosignal trajectories to enhance personalized medicine through continual learning
• Explored hardware acceleration techniques, focusing on innovative methods for data preprocessing in biological systems
• Revisited the principles of continual learning in search of nonstandard methods for addressing inefficiencies

Undergraduate Research Assistant, Melodia Lab

Institute for the Wireless Internet of Things, Northeastern University

📅 January 2023 – May 2023 📍 Boston, MA
• Developed a deep reinforcement learning algorithm for autonomous 5G network slicing within an Open RAN framework

PROJECTS

FROGS: Fine Resolution Optimization and Gradient Smoothing

📅 November 2023 – December 2023
• Implemented a Stable Diffusion pipeline tailored for producing high-fidelity images at fine resolutions on constrained computational resources
• Developed a flexible framework capable of producing high-quality images at scale
• Generated interlocking image segments in parallel, utilizing overlap and alpha blending for seamless transitions and enhanced smoothing effects

Senior Capstone: Project MOTION

📅 June 2022 – December 2022
• Awarded First Place at the Annual Northeastern University Capstone Competition
• Partnered with the city of Clinton, MA to define client needs
• Implemented MAV sensor suite for autonomous tunnel inspection
• Leveraged Mask R-CNN for autonomous crack detection in critical infrastructure

ENGINEERING PHILOSOPHY

- **Adaptability**
Embracing change as an integral cog within the machinery of innovation.
- **Scalability**
Architecting robust, scalable solutions through the synergy of interconnected systems.
- **Machine Intelligence**
Transforming data into understanding.
- **Statistics**
Guiding decisions with statistical clarity and insight.
- **Problem Solving**
Distilling issues to the fundamentals and drawing inspiration from diverse fields for elegant solutions.

SKILLS

- Python
- C++
- Verilog
- Data Visualization
- Data Preprocessing
- PyTorch
- Tensorflow
- Edge Computing

REFERENCES

Giovanni Traverso

🏠 Associate Professor
🏛 Massachusetts Institute of Technology
✉ traverso-lor@mit.edu

Ceara Byrne

🏠 Research Scientist
🏛 Massachusetts Institute of Technology
✉ boglin@mit.edu

Ian Ballinger

🏠 Research Engineer
🏛 Massachusetts Institute of Technology
✉ iballinger@mit.edu

Tim Deso

🏠 Senior R&D Manager
🏛 Hologic
✉ timothy.deso@hologic.com

Doug Riker

🏠 Principal R&D Engineer
🏛 Hologic
✉ doug.riker@hologic.com