Manchester, Massachusetts 01944 | (978)-500 8671 | larspwarntsen@gmail.com | https://larspwarntsen.github.io/

#### Education

#### RENSSELAER POLYTECHNIC INSTITUTE, TROY, NEW YORK

**AUG 2021 TO MAY 2025** 

BACHELOR OF SCIENCE in Biomedical Engineering with a Minor in Healthcare Markets Distinction: CUM LAUDE

# Research Experience

# Visiting Researcher | RPI - Deep Imaging Analytics Lab | May 2025 to Current | Troy, NY

- · Developed a deep learning pipeline for joint segmentation and classification of skin lesions
- · Built multimodal classifiers and a reinforcement learning curriculum for molecular generation
- · Presented research regularly to PI Dr. Pingkun Yan and lab members

### Researcher and Co-Author | Rensselaer Polytechnic Institute | SEP 2023 to MAY 2024 | Troy, NY

- · Co-authored a chapter with Dr. Nancy Campbell on the medicalization of extreme sport athletes
- · Conducted interviews and a literature review to examine risk and addiction in athletic subcultures

# Research Assistant | Human systems Neuroscience | APR 2019 to AUG 2019 | Boston, MA

- · Analyzed electron microscopy images and performed 3D reconstructions of neurons
- · Assisted with brain tissue preparation and staining for slide analysis

### Research Projects

#### Multimodal AI for de novo CNS Drug Design via Molecular Generation

- Fine-tuned a SMILES-based transformer model with reinforcement learning to generate CNS-optimized molecules
- · Integrated SHAP-informed property classifiers into reward curriculum
- · Accepted for presentation at BMES Conference 2025

### Wearable Device for Gait and Sedentary Behavior Monitoring

- Engineered a wearable IMU-based system using a microcontroller with Bluetooth transmission and an XGBoost classifier to monitor gait and sedentary behavior in older adults
- · Collaborated with Dr. Todd Shatynski of The Bone & Joint Center on clinical use cases

### **Skin Lesion Segmentation and Classification Pipeline**

- · Built a deep learning workflow combining segmentation and classification
- · Classified lesions across 9 diagnostic categories including melanoma and keratosis

#### **Medicalization of Extreme Sports Athletes**

- · Investigated biological vs. sociological frameworks of addiction
- · Conducted interviews, memoir analysis, and literature review
- · Chapter currently in production

#### **Publications and Conference Posters**

- Multimodal AI for de novo CNS Drug Design via Molecular Generation. Poster, BMES Conference, 2025 (with Dr. Pingkun Yan).
- Medicalization of Extreme Sports Athletes in a Risk Regulatory Society. Chapter, forthcoming, 2025 (with Dr. Nancy Campbell).

## **Industry Experience**

## Lab Operations Intern | Ultragenyx Pharmaceuticals | JUN 2023 to AUG 2023 | Woburn, MA

- · Managed QC sample logistics and completed GMP documentation
- · Led inventory optimization and lab protocol updates

# Product Development Consultant | Veritas Genetics | JUN 2022 to SEP 2023 | Danvers, MA

· Curated mutation data for 13,000+ genes to streamline genetic testing workflows

## Lab & Operations Assistant | Veritas Genetics | NOV 2020 to AUG 2021 | Danvers, MA

- · Processed thousands of COVID-19 tests and coordinated region-wide sample logistics
- · Developed internal software to enhance sample accessioning
- · Ensured CAP, CLIA, HIPAA, and OSHA compliance

#### **Additional Information**

- · Certified in Mental Health First Aid
- · Emergency Room volunteer, Samaritan Hospital in Troy, NY
- · Founder, annual charity sports tournament at RPI
- · Fundraised thousands for the Jimmy Fund via Boston Marathon walks
- · UI/UX design and marketing strategist for edtech startup FuzeMee
- · Former camp counselor and restaurant server