

Ronald Nap

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EDUCATION

University of California, Berkeley

September 2024 - December 2025

Master of Information and Data Science

GPA: *IP*

University of California, Merced

August 2020 - May 2024

Bachelor of Applied Mathematics, Emphasis in Data Science

GPA: 3.71

Courses: Data Structures, Applied Statistics, Numerical Linear Algebra, Stochastic Processes, Mathematical Optimization

Awards: [Outstanding Undergraduate Student Award](#)

Certificates: Google Data Analytics, TensorFlow Developer

WORK EXPERIENCE

Valeo

San Mateo, CA

Machine Learning Software Engineer Intern

July 2024 - December 2024

- Developing a 3D mapping and localization system for continuous tracking and navigation of a multifloor parking garage.
- Quantized SegFormer leveraging semantic segmentation to extract semantic guided feature detection and description.
- Leveraging GPU-accelerated deep feature matching replacing traditional CPU-based methods with OmniGlue.
- Reconstructing 3D point clouds with deep learning-based frontend in Colmap using Stereo Vision, GPS, and Odometry.

Computational Optimization Group

Merced, CA

Machine Learning Researcher

February 2023 - May 2024

- Developed a novel [two-stage weakly supervised framework](#) for the classification of Whole Slide Images in Pathology.
- Obtained state-of-the-art results leveraging Contrastive Learning and Multiple Instance Learning.
- Wrote [conference paper](#) as first author, leading to acceptance for publication and presentation at IEEE EMBC 24.

Summer Undergraduate Research Institute

Merced, CA

Machine Learning Researcher

June 2023 - August 2023

- Implemented a Generative Adversarial Network to generate synthetic training data to address data scarcity.
- Designed an [iterative refinement process](#) that evaluated and selected high-quality synthetic images for retraining.
- Enhanced baseline classification model by F1 score of 0.04 through the integration of synthetic training data.

Lawrence Livermore National Laboratory

Livermore, CA

Data Science Intern

July 2023 - August 2023

- Engineered Long Short-Term Memory based classification models to diagnose irregular heartbeats.
- Built and optimized Convolutional Neural Networks for precise reconstruction of cardiac transmembrane potentials.
- Showcased findings through a [poster presentation](#) to a diverse scientific audience of colleagues, researchers, and staff.

PROJECTS

DigitPro99 | [Website](#) | [Github](#) | (Tensorflow, ONNX, JavaScript, CSS, HTML)

2024

- Developed an interactive web-based digit recognition application using tensorflow for model development.
- Implemented ONNX for model operations and Firebase for dynamic storage management and retrieval of images/labels.
- Capable of real-time prediction, comprehensive user interactions, dynamic image annotation, and data retrieval.

Lung Cancer Analysis with Medical Imaging | [Github](#) | (PyTorch, SciKit-Learn, Torchvision, Pillow)

2023

- Analyzed and experimented with a multi-class dataset of 25,000 medical images focusing on lung cancer tissues.
- Implemented Logistic Regression, Decision Tree, Random Forest, Support Vector, VGG, and ResNet models.
- Examined the performance and trade-offs of traditional machine learning models against deep learning models.

Forecasting CO2 Emissions and Human Population | [Github](#) | (NumPy, Pandas, Differential Equations)

2023

- Constructed predictive mathematical models to analyze the correlation between CO2 emissions and human population.
- Employed least squares optimization and non-linear regression for parameter estimation and precise data fitting.

LEADERSHIP

STEM Tutoring Hub

Merced, CA

Instructional Learning Assistant

August 2022 - May 2024

- Assisted with mathematics and statistics to groups of students by adapting my teaching style to match the audience.

Society for Industrial and Applied Mathematics (SIAM)

Merced, CA

Undergraduate Representative

August 2023 - May 2024

- Collaborated with the leadership team to organize events and activities to promote mathematics and its applications.

Association for Computing Machinery (ACM)

Merced, CA

Data Science Interest Group Lead

January 2024 - May 2024

- Created and led workshops on data science, AI, and computer science, guiding and communicating with 50+ students.

TECHNICAL SKILLS

Programming Languages: Python, C++, R, SQL, Matlab, Java, Bash, LaTeX, HTML, CSS, JavaScript

Libraries: PyTorch, Tensorflow, Scikit learn, OpenCV, Torchvision, Pillow, MMCV, OpenGL, NumPy, Pandas, NLTK, Flask

Technologies: AWS, Docker, HuggingFace, SLURM, ONNX, CUDA, TenorRT, CVAT, Blender, Colmap, React, Tableau

Tools: Git, VS Code, Jupyter Notebook, Conda, Microsoft Office (PowerPoint, Excel, Word), Linux, Windows, MacOS