

Maya Devarajan

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY

Bachelor of Science, Biomedical Engineering

Magnum Cum Laude

PROFESSIONAL EXPERIENCE

Dassault Systèmes, MBSE Solution Architect

July 2024-current

- Partner with high-tech clients to apply model-based engineering techniques, leveraging SysML and UAF to assess reliability of complex, distributed system architectures.
- Apply targeted analytics—including model differencing, impact propagation analysis, and causal inference—to quantify how modifications in architecture models affect downstream capabilities, constraints, and trade-offs.
- Develop and interface predictive analytics with architecture frameworks to anticipate the effects of structural and behavioral changes, enabling proactive guidance and enhanced decision support for stakeholders.
- Incorporate uncertainty quantification and sensitivity analysis into architecture assessments to enhance confidence in KPI trends and support robust decision-making under architectural variability.

Merck & Co., Vaccine Manufacturing Intern

May -August 2023

- Developed analytics dashboards using Power BI, Power Query, DAX, and SQL to support quality, compliance, and operations in vaccine manufacturing.
- Implemented three production-ready solutions improving disinfection monitoring, biological sample status tracking, and quality notification efficiency.
- Designed and optimized data pipelines to automate transformations and improve dashboard responsiveness.

Cornell Tech, Machine Learning Researcher

Jan 2022-August 2023

- As an undergraduate researcher, designed and implemented a BERT unsupervised machine learning model for deidentifying electronic health records (EHRs) in collaboration with Cornell Weill Medical School, employing Natural Language Processing techniques.
- Aided the team in establishing a comprehensive pipeline using a black box model in PyTorch to monitor the model's performance and conducted rigorous statistical analyses to validate its outcomes.
- Fine-tuned the BERT model for EHRs to improve contextual understanding of medical data, utilizing cross-validation and performance metrics to assess model effectiveness and prevent overfitting.

RESEARCH EXPERIENCE

Building Neural Networks to Segment Dendrite Images, Cornell University, *Undergraduate Researcher* **Jan-May 2022**

- Designed and trained a UNet convolutional neural network in TensorFlow to segment and classify dendrite growth in neurodegenerative disease microscopy images.
- Created ground truth datasets using Fiji and built a data preprocessing pipeline to support high-throughput, image-based inference.
- Evaluated model performance using segmentation accuracy metrics and integrated the solution into existing research workflows to streamline analysis and enable scalable bioimage processing.

SPECIALIZED SKILLS

Certifications: Java Programming: Solving Problems with Software (Oct 2024), Sequence Models (Jan 2022), Convolutional Neural Networks (Aug 2021), Improving Deep Neural Networks: Hyperparameter Tuning, Regularization, and Optimization (Aug 2021), Structuring Machine Learning Projects (Aug 2021), Neural Networks and Deep Learning (Jul 2021)

Technical Skills/Languages: Python, SQL, R, Java, JavaScript, HTML/CSS, MATLAB, PyTorch, TensorFlow, Scikit-learn, Web Services, Microsoft Power BI, Power Query, DAX, Natural Language Processing (NLP), Data Analytics & Visualization, Metric Development, Model Hyperparameter Tuning, Machine Learning Models, Statistical Analysis

Skills: Verbal Communication, Analytical Skills, Problem Solving, Cross-functional teamwork, Time-Management, Adaptability, Detail-oriented, Data Privacy & Confidentiality

Languages: Spanish (Conversational)