

Noboru Hayashi

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PROFESSIONAL EXPERIENCE

Degas Ltd.

Senior Machine Learning Scientist

Japan

April 2022 – Present

- Spearheading the development of a foundational collective intelligence model for the JAXA Space Exploration Fund, establishing a robust base architecture with various foundation models for advanced aerospace and remote sensing applications
- Trained and fine-tuned task-specific Vision-Language Models (VLMs) for Earth Observation, achieving State-of-the-Art (SOTA) performance on the GeoBench benchmark for critical environmental tasks, specifically Tree Health assessment and Wildfire Risk Prediction
- Architecting and managing the end-to-end machine learning lifecycle, designing scalable infrastructure, robust data processing, and automated model training pipelines from the ground up

Amazon

Data Scientist

New York, NY

June 2017 – January 2025

- Engineered a CNN-based image processing pipeline for automated document cropping and transformation via corner point detection, boosting OCR accuracy by 60% and slashing model inference time by 98%
- Architected and deployed a multimodal receipt entity recognition model to classify OCR-extracted text tokens into structured key entities, achieving an 18% increase in extraction
- Designed an NLP-driven brand name similarity metric combining semantic and text-based techniques to seamlessly align 1P and 3P product catalogs
- Developed a network-based document image deduplication framework utilizing CNN and GNN architectures, achieving superior document understanding compared to traditional computer vision approaches

EDUCATION

Johns Hopkins University

Master of Science, Data Science

Baltimore, MD (Remote)

May 2020 - December 2023

Boston University

Master of Arts, Mathematics (BA/MA program)

Boston, MA

September 2015 - May 2016

Boston University

Bachelor of Arts, Pure and Applied Mathematics (BA/MA program)

Boston, MA

September 2012 - May 2016

PROFESSIONAL DEVELOPMENT

University of Washington Coding Bootcamp

March 2020 – September 2020

Neural Networks and Deep Learning on Coursera

November 2019

Machine Learning by Stanford University on Coursera

September 2019

SKILLS

- **Machine Learning & AI:** Vision-Language Models (VLM), Large Language Models (LLM), Vision Transformers (ViT), Foundation Models, Multimodal AI, CNN, GNN, Earth Observation AI
- **Programming Languages:** Python, Java, SQL, JavaScript, HTML, CSS
- **Frameworks & Libraries:** PyTorch, TensorFlow, Hugging Face, OpenCV, Scikit-learn, Pandas, NumPy
- **Cloud, Data & MLOps:** AWS (SageMaker, EMR, Redshift, Glue, Lambda, S3, EC2, RDS), RDBMS (PostgreSQL, MySQL, Oracle), End-to-End ML Pipelines, Docker, Slurm, Weights & Biases
- **Languages:** Professional fluency in Japanese (Native), English (Fluent), and Mandarin Chinese (Fluent)