JIHUN MOON

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SUMMARY

MS in Data Science, AI/ML Engineer with expertise in Vision AI, Generative AI, Machine Learning, and Data Analysis. Develop multi-modal AI models and construct data ingest pipelines. Skilled in bridging the gap between AI technology and non-tech users by simplifying complex concepts and providing hands-on support. Actively involved in researching and collaborating with medical professionals to develop AI-driven surgical analysis system.

EXPERIENCE

University of St. Thomas
> Adjunct Professor (2025 -)
> AI Innovation Fellow (2024 -)
> Research Assistant (2022 - 2024)
> Member: Internal R&D Working Group, Institute for AI for the Common Good

Hanjin Information Systems & Telecommunication
> Technical Sales Engineer (2011 - 2019)

EDUCATION

University of St. Thomas
> MS, Data Science (2024)

Minneapolis College
> AS, Sound Art (2019)

Yonsei University
> BE, Computer Science, Information & Communication Engineering (2011)

RESEARCH AND PROJECTS

Medical Image Object Detection and Prediction: AI-Based Surgical Analysis System
> AI-driven methods to detect, measure, and analyze surgically implanted Sacrum Neuromodulation device for a clinical application
>
> Patent: "Device and Methods for using AI-Mediated Imaging to Measure, Optimize, Implant, Track and Program Surgically Implanted Neuromodulation in Research and Clinical Applications" (November 11, 2024), US 63/718,910
>
> Papers: "Development of a computer-vision model to detect and localize sacral neuromodulation leads and anatomic structures during surgical implantation", American Urological Association (2025)
>
> "AI-Based Denoising and Identification of Neuromodulation Lead Locations from Limited Intraoperative Fluoroscopy Images", IEEE Engineering in Medicine and Biology Society (2025)

University Public-facing AI Chatbot Development Project
  Document retrieval and re-ranking (advanced RAG), web crawling, parse documents, frontend UI/UX
  Serverless API service architecture on AWS with Step Functions, Lambda, DynamoDB

NL query platform for course search / Sentiment analysis for natural language queries
  "Transforming User Experience and University Services with Generative AI"
  Award: Faculty & Staff Innovation Fellows program, Provost's office

Data Lake Semantic Map & Natural Language Search – University R&D Project
  Data lake metadata extraction, data ingest pipeline, natural language search, SQL generation
  Graph database, semantic map with metadata embeddings

Vision AI for Business Intelligence: Real-Time Footwear Object Detection and Classification
  Vision Transformer SAM, YOLO, Pre-trained CNN
  - AI-driven training label generation with Vision Transformer
  - Train and fine-tune models for object detection and segmentation

Machine Learning for Statistical Analysis: Cardiovascular Risk Prediction
  Logistic Regression, Support Vector Machine, kNN, Decision Tree, Random Forest
  - Integrate multiple ML models on clinical datasets for an advanced statistical analysis

Geographical and Time Series Data Analysis: Maximizing Investment Profit, Zillow Data Analysis
  Time Series Forecasting, Geospatial Data
  - Forecasted housing price trends, ROI simulations and visualization

Streaming Data Analysis: Real-Time Processing and Analysis of YouTube Chat Data
  Apache Spark, PySpark, Natural Language Toolkit
  - Streaming data processing, semantic clustering, real-time dashboard

AWARDS AND GRANTS

award

Faculty & Staff Innovation Fellows Program Award, Provost's office (2025)
    "Transforming User Experience and University Services with Generative AI"

scholarship

Dean's Scholar: Graduate Engineering Scholarship, Research (2024)

PATENTS AND PUBLICATIONS

publication

"Development of a computer-vision model to detect and localize sacral neuromodulation leads and anatomic
    structures during surgical implantation", American Urological Association (2025)
"AI-Based Denoising and Identification of Neuromodulation Lead Locations from Limited Intraoperative
    Fluoroscopy Images", IEEE Engineering in Medicine and Biology Society (2025)

patent

"Device and Methods for using AI-Mediated Imaging to Measure, Optimize, Implant, Track and Program
    Surgically Implanted Neuromodulation in Research and Clinical Applications" November 11, 2024,
    Application No. US 63/718,910