Jeong Kyu Lee

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Education

New York University — Abu Dhabi, United Arab Emirates

Bachelor of Science in Computer Science, Minor in Applied Mathematics — *September 2019 – May 2025*

- GPA: 3.9 / 4.0
- Capstone Project: Machine Learning Based Screening Tool for Lung Cancer Detection
- Awarded a full scholarship to pursue an undergraduate degree ($362K over 4 years)

Research Experience

Computational Biology and Bioinformatics Lab — Abu Dhabi, UAE

Undergraduate Research Assistant — *March 2024 – Present*

- Developing a non-invasive, ML-based screening tool for early-stage lung cancer detection using gut and lung microbiome data
- Evaluating ML models (Random Forest, Naive Bayes, etc) to optimize performance for cancer diagnostics
- Implementing feature selection and extraction techniques to analyze complex microbiome datasets from 16S rRNA gene amplicon sequencing
- Processing and analyzing high-dimensional biological data using specialized tools like QIIME and MetaPhlAn3

Computational Solid Mechanics (CSM) Lab — Abu Dhabi, UAE

Undergraduate Research Assistant — *September 2024 – Present*

- Developing interactive 3D visualization systems for structural digital twins using VTK and PyQt5 in a Mubadala-funded project
- Implementing real-time data visualization features including dynamic color mapping, sensor data integration, and time-series animations for structural analysis
- Integrating multiple data streams (accelerometer, strain gauge) with visualization interface for comprehensive structural monitoring
- Designing and implementing sensor visualization system with clickable 3D markers for real-time data access
- Collaborating with research partners from other fields and presenting progress to Mubadala stakeholders

Social Science Experimental Laboratory (SSEL) — Abu Dhabi, UAE

Undergraduate Research Assistant — *October 2022 – September 2024*

- Provided oTree programming support to 6 capstone students to help design and implement experimental studies
- Developed data analysis and analytics scripts for economic data using Python and R for various economics professors
- Developed a comprehensive oTree-based experimental platform for studying three-person profit-sharing decisions and bargaining behavior
- Implemented real-time features including dynamic payoff calculations, multi-player synchronization, and automated agreement tracking
- Built data collection system to capture detailed metrics including agreement patterns, timing data, and participant responses across multiple rounds

High-Performance Computing Lab (NYU Tandon) — Brooklyn, USA

Undergraduate Visiting Scholar — *June 2023 – December 2023*

- Implemented and documented MLPerf Inference benchmarks on NYU Greene HPC cluster using BERT-Large models
- Helped optimize benchmark parameters including resource allocation (8 CPU cores, 100GB memory) and GPU utilization on A100 nodes
- Collaborated with team to analyze performance metrics and achieve consistent 70% accuracy across benchmark runs
- Created technical documentation website detailing MLPerf setup procedures and benchmark execution steps

Professional Experience

Loop Dimension Seoul, South Korea
Founder & CEO *May 2024 – Present*

- Founded a startup delivering digital solutions for diverse clients including major corporations like HSad (LG company)
- Generated over $15K in revenue and secured 10 contracts within the first 3 months of operations
- Built and led a team of 5 developers and designers to develop web/mobile products and other software, including ML projects
- Established partnerships with 3 local companies, managing their digital products and continuously delivering new projects

Storybutton South Carolina, USA
Full Stack Developer Intern *April 2024 – August 2024*

- Developed an iOS podcast streaming application (`bttn+`), currently the #1 Family Audio Streaming App
- Developed an app that lets parents create kids' podcasts with AI tools, reducing production time by over 95%
- Designed and implemented podcast content management system to organize and manage audio content and metadata
- Collaborated in a cross-functional team of designer, developers, and marketer to deliver product features and improvements through regular sprint meetings

Airev Holding Limited Dubai, UAE
AI Engineer Intern *June 2024 – July 2024*

- Analyzed over 100 cultural and demographic datasets from various sources of Dubai's local data
- Worked with the engineering team to add 8 new AI plugins to the platform for customized solutions for businesses
- Performed comprehensive data analysis and mapping of Dubai's local datasets to identify patterns, relationships, and potential use cases for businesses
- Combined and structured diverse datasets into common plugins, providing meaningful context for practical business use

Geaux Network Massachusetts, USA
Full Stack Software Engineer Intern *January 2024 – March 2024*

- Addressed and resolved over 15 website functionality and user experience issues, enhancing site accessibility
- Developed 2 new features to increase user engagement, and optimized 4 existing ones for enhanced usability
- Implemented responsive design improvements to ensure seamless user experience across desktop and mobile devices

Fortyguard Abu Dhabi, UAE
Research & Development Intern *April 2023 – July 2023*

- Conducted comprehensive market research across 5 target regions to evaluate current technological trends
- Assisted in collecting and analyzing over 10 GB of data and developing and training machine learning model
- Gathered and integrated open-source weather and temperature APIs to enhance data collection pipeline

Leadership Experience

Residential College (NYU Abu Dhabi) Abu Dhabi, UAE
Undergraduate Residential Assistant *Fall 2024 – Present*

- Led and organized 5 community-building events to create a welcoming and inclusive environment for the residents
- Providing personalized support through one-on-one meetings with residents to ensure their well-being
- Conducting regular community walks and responding to after-hours emergencies as part of on-call duty rotation
- Collaborating with Residential College Director in implementing residential curriculum and safety protocols

Writing Center Advisory Panel (NYU Abu Dhabi) Abu Dhabi, UAE
First Year Student Representative *Fall 2019 – Spring 2020*

- Identified and resolved issues found by in-person and online surveys in the Writing Program and Writing Center
- Organized writing workshops/events, updated Candidate Weekend prompt, and promoted Writing Center usage
- Developed strategies to increase student engagement with Writing Center services through peer outreach programs

First Year Committee (NYU Abu Dhabi) Abu Dhabi, UAE
First Year Committee Member *Fall 2019 – Spring 2020*

- Addressed student concerns brought up in feedback surveys, through various meetings with different entities
- Successfully hosted movie nights, retreats, taboo nights, and workshops to strengthen community bonds
- Facilitated communication between first-year students and university administration to improve student experience

Projects

MedLink | *Software Engineering Web Platform Project* Fall 2024

- Developed a Flask and React based healthcare platform enabling patients to input symptoms and receive AI-powered preliminary diagnoses using open source LLM APIs
- Utilized various external APIs, including WebRTC for video consultations and FullCalendar for interactive scheduling, for enhanced user experience
- Extending the system to incorporate a voting algorithm combining multiple LLMs (GPT, Llama, Gemini, etc) for enhanced diagnostic accuracy and preparing research paper for publication

NavGuard | *Data Science Web Application Project* Fall 2023

- Developed a Flask-based web app to address the challenge of safely navigating through New York City
- Integrated multiple NYC Open Data APIs including traffic volume, construction zones, and collision data using Socrata API
- Utilized interactive map visualizations (Folium) and efficient pathfinding algorithms (OSMnx, NetworkX) to analyze traffic patterns, construction zones, and accident data (Pandas, KMeans clustering)
- Implemented geocoding and data processing pipelines to handle and visualize over 200,000 collision records and 42,000 traffic patterns

Impact of COVID-19 on Education | *Data Analytics Project* Spring 2023

- Analyzed differing impacts of COVID-19 on education across countries with various GDP per capita levels using R
- Integrated and cleaned multiple datasets from World Bank, WHO, and UN sources to create a comprehensive analysis pipeline
- Developed statistical models to quantify relationship between COVID-19 cases, GDP levels, and education metrics
- Processed and analyzed over 200+ countries' data across metrics including GDP per capita, literacy rates, enrollment rates, and COVID-19 cases
- Created data visualizations comparing youth literacy rates and secondary enrollment rates between top and bottom 25% GDP countries

Skills

C, C++ (MPI, OpenMP, CUDA), Python (NumPy, Pandas, TensorFlow/PyTorch, Flask, Matplotlib, Beautiful Soup, Scikit-learn), R, Javascript (React.js, Node.js, Next.js, p5.js), SQL, LaTeX, API, Git, Docker, ML