

# HAN DEOK LEE

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## EDUCATION

### Thapar Institute of Engineering and Technology

BTech Computer Engineering

Patiala  
September 2021 - Present

### Indian Institute of Technology

Bs Data Science and Applications

Madras  
January 2022 - Present

## PUBLICATIONS

**Regulating I/O Performance of Shared Storage with a Control Theoretical Approach** *Han Deok Lee, Young Jin Nam, Kyong Jo Jung, Seok Gan Jung, Chanik Park*

Pre-Print Link: <https://doi.org/10.36227/techrxiv.24448963.v1>

Under Review IEEE Sensors Journal

12th NASA Goddard / 21st IEEE (MSST2004) Conference on Mass Storage Systems and Technologies

## EXPERIENCE

### Columbia University

November 2023 - Present

*Research Intern under Prof. (Dr.) Eugene Wu*

- Pioneering the development of automation methodologies for Kaggle competitions through the strategic integration of Large Language Models, optimizing processes for heightened efficiency and competitive advantage.

### Carneige Mellon University

November 2023 - Present

*Research Intern under Prof. (Dr.) Min Xu at XuLabs*

- Currently engaged in cutting-edge research in biomedical image analysis, with a focus on the application of cryo-electron tomography (cryo-ET) and cryo-electron microscopy (cryo-EM) techniques for advanced image processing and analysis.

### Indian Institute of Technology Indore

July 2023 - Present

*Research Intern under Prof. (Dr.) Chandresh Kumar Maurya*

- Proficiently contributed to the alignment of diverse text-to-text and text-to-audio scripts across 14 distinct Indian languages, employing a range of advanced aligner tools.
- Employed NLP and IndicNLP libraries for text preprocessing, constructing a gold standard dataset to drive the application of various ML/DL models.

### Indian Institute of Technology Mandi

June 2023 - Present

*Research Intern under Prof. (Dr.) Varun Dutt in Digital Nose Project*

- Orchestrated migration of local workflows to servers using automation and DevOps principles, optimizing operational efficiency and boosting machine learning model accuracy.
- Utilized FastAPI to create asynchronous functions to process automation and applied machine learning algorithms, including classification and stack meta-modeling, to boost predictive accuracy.

### Thapar Institute of Engineering and Technology

May 2023 - Present

*Research Intern under Prof. (Dr.) Sachin Kansal*

- Developed an efficient pipeline for extracting frames from video data, utilising advanced image processing techniques, parallel processing, and error handling.
- Optimised the pipeline's performance, enabling swift extraction of frames from large-scale video datasets while ensuring accuracy and data integrity.
- Leveraged Beautiful Soup and bs4 libraries to surpass Google Translate's 5000-character limit, enabling translation of unlimited text seamlessly.

### Thapar Institute of Engineering and Technology

June 2023-July 2023

*Guest Lecturer*

- Invited as guest of honour to deliver the lecture in Thapar summer School of Machine learning and deep Learning and delivered 6 lectures on Image Processing and natural language processing.

## PROJECTS/ACHIEVEMENTS

### PixelMind AI

May 2023

- Paradox'23 in Indian Institute of Technology Madras organised a contest in the domain of Image enhancement for students and industry professionals where I won 2nd Position and won a cash Prize of Rs.50K.
- Utilized a combination of C language and Python, along with image processing functions, to significantly expedite image enhancement compared to competitors in a time-efficient manner.

### Kaggle Master

June 2023

<https://www.kaggle.com/eishkaran>

- Participated in a global Kaggle competition on Binary Classification with Software Defects, competing against 1702 teams worldwide. Achieved an impressive world ranking of 44, placing in the top 3% of participants. Employed advanced classifier models to optimize accuracy within the shortest time frame, demonstrating a strong commitment to efficiency and excellence in data analysis and predictive modeling

## SKILLS

Programming Languages:	C, C++, Go, Rust, Python, Javascript
Database Management Systems:	MySQL(MariaDB), MongoDB, Prometheus, Influx DB
Cloud Computing:	GCP, AWS
Web Development:	HTML , CSS, JavaScript
Tech Stack:	Flask , FastAPI
Libraries / Frameworks:	Pandas, Numpy, Seaborn, Tensorflow, Pytorch, XGBoost, scikit-learn, OpenCv, PIL
Machine Learning:	Regression, Classification, Clustering, Neural Networks, Deep Learning, LLM
Soft Skills:	Public Speaking, Leadership