HUYEN LE

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EDUCATION

Yonsei University, South Korea   Graduation: 02/2023
B.Eng in Applied Information Engineering   GPA: 3.64/4.0
B.A in International Commerce

Relevant Coursework: Information Programming I & II, Applied Data Structure, Applied Algorithm, Introduction to Database Management System, Information Software Engineering, Introduction to Data Analysis, Advanced Data Analysis, Mathematics for Artificial Intelligence, Natural Language Information Analysis, Social Network Analysis.

Honors and Awards:
- Undergraduate Merit-based Scholarship (100% Tuition)
- 2022-1 Honor Award (GPA Top 10%)
- GLC Distinction Award in three courses: Statistics, Logical Thinking with Computer Programming, Social Network Analysis (award for best student)

RESEARCH & WORK EXPERIENCE

Research Assistant - Supervisor: Dr. Hieu Pham   Hanoi, Vietnam
VinUni-Illinois Smart Health Center, VinUniversity   *02/2024 – Present*
- Research Project: Evaluating the Effect of Antiviral Drugs using Polarized Light Imaging and Machine Learning Approaches: The Case of Human-induced Pluripotent Stem Cell-derived Cardiomyocytes.
- Conference Proceedings
Huyen Le, Khiet Dang, Tien Lai, Nhung Nguyen, Mai Tran, Hieu Pham, SarcNet: A Novel AI-based Framework to Automatically Analyze and Score Sarcomere Organizations in Fluorescently Tagged hiPSC-CMs. *arXiv:2405.17926 (2024) (available at http://arxiv.org/abs/2405.17926 - Invited talk at BME10)*

Researcher & Software Engineer   Seoul, South Korea
SmallMachines Inc. / Corporation R&D Center   *01/2023 – 01/2024*
Focused on AI in Healthcare:
- Developed a binary classification model to distinguish between healthy and sepsis patients using tabular data from 30 routine tests in the Complete Blood Count (CBC) test. Preprocessing steps included data cleaning, exploratory data analysis (EDA), visualization, imputation, transformation, and removal of highly correlated variables. Applied LightGBM to the preprocessed data, achieving an accuracy of 0.92 and an AUC score of 0.95.
- Developed a multiclass classification model to predict the time of septic shock onset in patients at high risk of sepsis (12 hours, 24 hours, 48 hours, 96 hours). The model utilized 30 CBC test routines, time-series vital signs (blood pressure, respiratory rate, pulse, body temperature), and clinical notes as input. Data was preprocessed and fitted using the ExtraTreesClassifier, resulting in an accuracy of 0.65 and an AUC score of 0.6.
- Built a machine learning model for early detection of Mild Cognitive Impairment (MCI) in elderly people, using p-tau, t-tau, Aβ42, Aβ40 measured by company's immunoassay analyzer. The accuracy was 0.72, more experiments and features selection work needed conducting.
- Developed web-based platforms using React JS, Flask, Firebase, and Google Cloud to deploy the trained Machine Learning models, making the models accessible.
- Built a mobile app which gets real-time ECG data from a measured device and suggests music for users based on stress level calculated from Heart Rate Variability metrics.
- Conducted preliminary research for R&D projects funded by the Korean Government by reviewing research papers to analyze multiple approaches' viability (e.g.: Relationship between vitamin D and breast cancer, Biomarkers in detecting myocardial infarction).

PATENT

Choi Jun Kyu, You Jung Min, **Le Minh Huyen**, Lee Ju Hun. *"Sepsis early diagnosis and prognosis prediction system and the method thereof"* - Korean Intellectual Property Office (KIPO). Pending.

SCHOOL PROJECTS

Kpop Songs Recommendation Algorithm (Yonsei Data Science Academia Club): Python
(Final report: https://huyen1607.github.io/assets/Group-3_DATUM-2021-Final-Report-Redone.pdf)
- Developed a Kpop music recommendation algorithm based on the idea of user-based collaborative filtering, using the publicly available "Cross-cultural pop song mood ratings (US, KR, BR)" dataset.

Research on South Korea's Low Fertility Rate: Python (Numpy, Pandas, Matplotlib)
- Collected data, visualized, conducted exploratory data analysis and statistical hypothesis testing.
- Conclusion: the increase in living cost and female employment rate contribute significantly to South Korea's low fertility rate.

Facebook UI-UX Redesign: Wix, Figma
- Proposed a new UX-UI on Facebook design, took users' inconvenience into account and made popular features (e.g. Reels, Marketplace, Watch) more easy to access.

INTERNSHIP EXPERIENCE

Data Operator Intern   Hanoi, Vietnam
Nexus Frontier Tech   *01/2022 – 04/2022*
- Processed input data for IT projects on AI technology according to instructions. Completed dataset for ESG-related articles classification model.
- Brainstormed and evaluated data usefulness to ensure progress and quality of data delivered.

Summer Intern, Market & Investment Analyst   Hong Kong
Strategic Year Holdings Limited   *06/2021 – 08/2021*
- Conducted research on the Vietnamese EdTech industry, completed Edtech landscape evaluation including market sizing and competitor research to propose new potential investment targets.
- Joined writing deal memorandum including details on the business structure, financial risk & health, and other important details to help drive the company's investing decision.
- Created and managed a LinkedIn account, weekly updated on company's activities and portfolio companies' milestones to maintain a solid pipeline of the investment community.

SKILLS

Technical Skills: Python, R, SQL, Web Development (JavaScript, HTML, CSS, Flask, Firebase, Google Cloud)
Languages: Vietnamese (Native proficiency), English (IELTS 7.5), Korean (TOPIK 5)

REFERENCES

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