HIEU (HUGH) NGUYEN

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EDUCATION

JOHNS HOPKINS UNIVERSITY, School of Medicine and School of Engineering **Baltimore, MD**
Doctor of Philosophy, Biomedical Engineering – Data Science track *Dec 2022 (Expected)*

- Dissertation Topic: Machine Learning-Driven Methods for Time-to-Event Analysis with Integration of Longitudinal Data and Image Data with an Application on Cardiovascular Disease

Master of Science, Biomedical Engineering *May 2019*

- Relevant Projects: Automatic Recognition and Classification of Breast Cancer using Breast X-ray Images, Statistical Shape Modeling using MRI Brain Scan Images
- Relevant Coursework: Deep Learning, Machine Learning, Medical Imaging Analysis, Precision Medicine, Methods in Biostatistics, Epidemiologic Methods, Anatomy, Cardiac Electrophysiology, Computational Fluid Dynamics

TRINITY COLLEGE **Hartford, CT**
Bachelor of Science, Mechanical Engineering, *Magna Cum Laude, Phi Beta Kappa, GPA 3.89* *May 2017*

- President's Fellow of Engineering – The highest honor for an Engineering-major student; Full-ride Scholarship

EXPERIENCE

APPLE INC. **Cupertino, CA**
Data Scientist Co-op – Health Technologies Team *Jun 2021 – Dec 2021*

- Researched and analyzed user behavioral patterns ("phenotypes") using 2+ million days of real-world tracking data collected in a large public study leveraging methods in statistical inference, clustering, deep learning, causal inference, and time-series analysis; the work resulted in one abstract for an internal Machine Learning conference and two internal white-paper manuscripts
- The work is split between research for scientific discovery and for product shipment of future software features in Apple devices
- One of 8 finalist teams for the internal intern competition from a pool of 400+ teams, pitched ideas in front of executive-level judges

PERTHERA INC. **Boston, MA**
Biomedical Data Scientist Intern *May 2020 – Dec 2020*

- Build and deploy the company's first-ever outcome prediction for treatment response in patients with pancreatic cancer, utilizing ML and statistics on real-world evidence data
- Develop the next generation of smart literature recommendation system that recommends the most relevant papers and abstracts to oncologists from a pool of 48,000+ Pubmed oncology papers and ASCO abstracts using NLP methods

JOHNS HOPKINS HOSPITAL **Baltimore, MD**
Health Analytics Researcher– Precision Care Medicine *Sep 2018 - Present*

- Develop individualized real-time early warning models for various conditions and complications encountered in critical care settings such as hypoxemia, organ injury, and thrombosis, in partnership with physicians & engineers
- Manage and guide 8 student research teams on every step of their data science projects: from data wrangling, handling missing data, feature selection, statistical analysis, model development, optimization, model interpretation, to oral and written presentation
- Won the Investigation Award with the cardiac arrest team as co-first authors at RESS 2019, one of the most important cardiac arrest meetings worldwide; also resulted in 1 publication

JOHNS HOPKINS ENGINEERING **Baltimore, MD**
PhD Candidate Researcher *August 2017 - Present*

- Build and evaluate models for cardiac-related disease prediction, risk stratification, disease trajectory forecasting, subgroup clustering, and biomarker discovery, resulting in 1 published journal article and 1 manuscript in preparation so far
- Derive insights and knowledge from various types of high-dimensional medical data (images, time-series, electronic health records, cohort studies, clinical trials) using biostatisticss , ML, and deep learning methods

MEDTRONIC **North Haven, CT**
Contract Engineer - Minimally Invasive Therapies *Sep 2016 - May 2017*

- Designed, analyzed, and prototyped a testing fixture for Medtronic's Signia Surgical Stapler used in laparoscopic surgery; reducing cost per fixture by $245,000 i.e. enhancing affordability by 50 times; improved fixture's portability and ease in use

TECHNICAL SUMMARY

Projects: please visit https://hieu-hugh-nguyen.github.io for exciting details!
ML/Statistics: model tuning, model stacking, deep learning, survival analysis, data querying, data manipulation, feature selection, feature engineering, distributed computing, cloud computing, shell scripting, model deployment
Software Tools: R, Python (TensorFlow, Keras, Pytorch, Sklearn) (5+ years of experience), SQL (BigQuery, PostGreSQL, MySQL) (4+ years), Unix Shell (4+ years), MATLAB (8+ years), Java, Bash, Git, Vitrea Imaging, LaTeX, STATA, SAS, Spark
Cloud platforms: Google Colab, AWS, Azure, Databricks
Container Technologies: Docker

LEADERSHIP & ACTIVITIES

Leadership:
Manage 8 data science teams of six junior researchers - JHU Precision Care Medicine
Guest lecturer for education session "Start Learning Data Science", to young physicians and healthcare professionals in Southeast Asia, sponsored by the Young Southeast Asian Leaders
Guest lecturer for education session "AI in Medicine", to college and high school students of Pencil Philosophy org, Vietnam
Former Vice-President of IEEE Chapter - Trinity College Chapter
Teaching Assistant - 4 Courses in Mathematics and Engineering at JHU and Trinity
Former Team Leader - Senior Design Capstone Project
Former Student Manager - Trinity College Library Circulation Desk

JOURNAL PUBLICATIONS

1. **Nguyen, H.T.***, Kim, H.B.*, Jin, Q.*, Tamby, S., Romer, T.G., Sung, E., Liu, R., Greenstein, J.L., Suarez, J.I., Storm, C. and Winslow, R.L., 2021. Computational Signatures for Post-Cardiac Arrest Trajectory Prediction: Importance of Early Physiological Time Series. Anaesthesia Critical Care & Pain Medicine, p.101015.
2. Palepu, A.K., Murali, A., Ballard, J.L., Li, R., Ramesh, S., **Nguyen, H.**, Kim, H., Sarma, S., Suarez, J.I. and Stevens, R.D., 2021. Digital signatures for early traumatic brain injury outcome prediction in the intensive care unit. Scientific reports, 11(1), pp.1-9.
3. Ciuffo, L., **Nguyen, H.**, Marques, M.D., Aronis, K.N., Sivasambu, B., de Vasconcelos, H.D., Tao, S., Spragg, D.D., Marine, J.E., Berger, R.D. and Lima, J.A., 2019. Periatrial fat quality predicts atrial fibrillation ablation outcome. Circulation: Cardiovascular Imaging, 12(6), p.e008764.
4. Woulfe, K.C., Siomos, A.K., **Nguyen, H.**, SooHoo, M., Galambos, C., Stauffer, B.L., Sucharov, C. and Miyamoto, S., 2017. Fibrosis and fibrotic gene expression in pediatric and adult patients with idiopathic dilated cardiomyopathy. Journal of cardiac failure, 23(4), pp.314-324.
5. Nakano, S.J., Siomos, A.K., Garcia, A.M., **Nguyen, H.**, SooHoo, M., Galambos, C., Nunley, K., Stauffer, B.L., Sucharov, C.C. and Miyamoto, S.D., 2017. Fibrosis-related gene expression in single ventricle heart disease. The Journal of pediatrics, 191, pp.82-90.