Khanh-Tung Nguyen-Ba (Keane)

329 Sterling St Apt 5D, Brooklyn • (319)512-9038 • kn2465@columbia.edu • github.com/kn27

Experience

doc.ai/Sharecare • *Principal ML Engineer* • Remote   **June 2022 - October 2022**
- Built engineering roadmap and contributed to future AI directions for Sharecare Plus - a newly launched precision health advocacy product
- Researched on personalization and learning to rank models, oversaw technical specs and development of a Next Best Actions recommender system in order to drive more engagements on digital therapeutics solutions and care gap closure on Health Advocacy platform
- Led a Real World Evidence project from ideation to delivery using causal inference to confirm the impact of treating diabetes members for mental health condition on their underlying chronic condition, as manifested by meaningful improvement on patients' A1C levels (>0.4%). The result had a direct impact on guiding the Clinical Experience team to find the most effective sub-cohorts for treatment targets, as part of the engagement between doc.ai and Anthem
- Managed AI Solutions team of 5 ML engineers and data scientists, provided mentorship and career planning

doc.ai/Sharecare • *AI/ML Lead* • Remote   **Aug 2021 - June 2022**
- Built classification models to predict complications after surgery for Total Knee Replacement patients with AUC > 0.8 in order to improve care planning. Collaborated with clinical SMEs and led the project from ideation to delivery,
- Led Cost of Care solutions that gave the largest health insurer in North America a more timely and accurate forecast of Incurred But Not Reported claims for > 10 millions Medical Surgery patients each month. Increasing precision and recall by more than 20% allowed the insurer to close more than 10% in annual reserve gap and react faster to adverse trends in cost
- Researched and stayed up to date on healthcare machine learning topics like application of NLP techniques on patient and diagnosis code embeddings

Pinessence Consulting • *Founder and Principal Consultant* • Remote   **March 2022 - Now**
- Ran a boutique full-stack AI/ML consultancy geared towards startups in insurance, healthcare and sport analytics
- Built a back-end object detection pipeline for tennis analytics using OpenCV, Pytorch, Jenkins and AWS, achieved > 80% accuracy for Wyatt AI
- Built the first Mortality Prediction POC for insurance solutions to showcase interpretable machine learning capability for ValidMind.ai

Sabbatical   **Sep 2020 – Aug 2021**
- Worked at Generable, built a data pipeline and meta analysis models for non-squamous lung cancer treatments
- Worked in Paninski's neuroscience lab, improved LDS models using sequential variational autoencoder
- Joined a Summer batch at Recurse Center
- Contributed to mc-stan's Bayesian benchmarking project as part of Google Summer of Code

Numerix LLC • *Technical PM/ Senior Financial Engineer & Actuary* • New York, NY   **Feb 2016 – Sep 2020**
- Set up counterparty risk adjustments solutions for top-tier banks in North America, oversaw all phases of projects from data transformation, modeling of interest rate portfolio, setting up cloud managed service to final delivery
- Led a global initiative to build out new enterprise market risk solution, drove product design, owned product roadmap
- Built proof of concept, served as business and technical expert on pre-sales and post-sales projects, product manager of Numerix Cross Asset applications and Python Software Development Toolkit, completed $10 million enterprise-level licensing deals in total
- Acquired extensive knowledge for Equity and Interest Rate Derivatives, Fixed and Variable Annuity benefits

- Collaborated with developers to set up and maintain a hedging platform for Variable Annuity and Fixed Annuity and Numerix enterprise-level counterparty risk solutions.
- Built State of the Art Risk Neutral, Real World and Nested Stochastic Economic Scenario Generator for asset management clients

Milliman • *Quantitative Analyst* • Chicago, IL   **Feb 2014 – Feb 2016**
- Worked in a global team of actuaries, quants and traders specialized in providing dynamic hedging services to variable annuity writers including international insurers, reinsurers, private equity firms.
- Produced nightly valuation, performed attribution analysis, reserve calculation and stress testing for Annuity blocks
- Worked as the only analyst supporting three consultants with setting up a new Variable Annuity hedging program from scratch for a block of business > $20 billion in Account Value that was acquired by Guggenheim Partners. The [transaction](#) was the largest life insurance acquisition in history at that time..

Education

The University of Iowa • B.S. Actuarial Science, B.B.A. Finance, B.S. Mathematics   **December 2013**
Columbia University • Master in Statistics   **Fall 2018 – Spring 2021**
Coursework: Linear Regression, Inference, Machine Learning, Deep Learning, Computational Stats (PhD), Graphical Models (PhD), Social Networks, Causal Inference (PhD), Neural Science (PhD), Reinforcement Learning (PhD)

Technical Skills

Python, R, AWS, Spark, Argo, MLFlow, PyTorch, Stan, Bayesian Statistics, SQL, MongoDB

Professional Credentials

Chartered Financial Analyst (CFA) holder (CFA) since 2018

Machine Learning Projects from PhD classes at Columbia

[1] Improving Dynamical Systems with variational autoencoder to better decode monkey's neural recording [[report and code](#)]
[2] Learning New York City's main traffic hubs with hierarchical Poisson factorization [[report and code](#)]
[3] Deep Learning for rheumatoid arthritis joint damage quantification [[report and code](#)]
[4] Learn to Cut - Better solve Mixed Integer Programming problems with Reinforcement Learning [[report and code](#)]