Avijit Singh Nalwa

nalwa.avijit@gmail.com | 310-562-7673 | GitHub | LinkedIn

WORK EXPERIENCE

Root Insurance *(Insurtech)* — Remote
Actuarial Analyst, Actuarial Pricing: Tooling — *May 2021 – Present*

- Created an R project that pulls and processes company-wide time-series data, models trends, creates predictions for actuarial metrics by all possible segment-cuts, and uploads results to a data warehouse efficiently. Researched and implemented optimal modeling approaches while using mathematical techniques to improve handling of edge cases, imputing data, and tracking data validity. Designed code for data scalability and reusability. Extended project to industry-wide data for comparison.
- Implemented parallel computing, modularity, unit-testing, and table design while collaborating on the creation of an interactive dashboard for visualizing results. Presented project to leadership while highlighting its value-add to multiple teams: actuary, state product management, and analytics. Walked through structure, code, and documentation to aid the peer-review process.
- Created multiple user-friendly R scripts that automated actuarial analyses for better risk-segmentation, the introduction of new rating variables, and identification of invalid data. Employed web-scraping, data-wrangling, data visualization, and GitHub PRs. This had a significant impact on team-wide efficiency, saving hours of work on numerous projects.
- Created a new metric and analysis that enabled the evaluation of a data science process for optimizing risk-segmentation to different geographies. Proposed the addition of a new step to the data science process to further improve state-specific model performance. Created an R-markdown report with efficient code and results organized and sorted for quicker insight identification.
- Created a new rating plan while implementing data science adjustments to optimize customer retention and risk-segmentation while also performing multiple actuarial analyses. Collaborated with product management to explore and resolve ad hoc research questions; paired with other analysts to unblock them from technical challenges and provided code and analysis peer-reviews.

Actuarial Intern, Actuarial Pricing: Tooling — *June – September 2020*

- Built R analysis that tracked the company's overall risk exposure levels, mix of business, and identified potential mispricing automatically. Created multiple custom data visualizations using Plotly. Efficient large-scale data handling using Data.table. Improved runtime by 75% while introducing new features that provided insight into the effects of Covid19 on the business.
- Created a novel feature selection method that consistently provided higher accuracy with fewer predictors than industry SOTA methods. Tested the approach on a number of Kaggle datasets and employed a variety of machine learning models for evaluation.
- Created and presented educational materials for the pricing team and interns on actuarial topics and feature selection approaches.

Siegel+Gale *(Brand Consulting & Strategy)* — Los Angeles, CA
Insights Intern, Research & Insights — *June – August 2019*

- Created an end to end brand segmentation analysis in R using k-modes clustering, parallel computing, and box-plot visualizations.
- Built Natural Language Processing and Topic Modeling tools in R that discovered brand themes from qualitative interviews.
- Designed a client facing brand equity survey and extracted findings from stakeholder interviews for VISA's brand architecture.
- Identified and presented new insights by conducting a research audit that resulted in a new positioning strategy for Lam Research.
- Built R user-classification tool for name validation and segment brand perception research for NBC Universal (Peacock streaming).

Green Hasson Janks *(Consulting: Accounting & Tax)* — Los Angeles, CA
Technology Solutions Intern, Tax & Audit — *April – June 2019*

- Improved the efficiency of a custom automated billing solution and business-facing tax deduction optimization product by redesigning the excel data-table structure & reducing computational complexity, led to product creation and improved productivity.

The Princeton Review *(Education)* — New Delhi, India
Consulting Intern, Revenue & Partnerships — *July – August 2018*

- Optimized marketing strategy by creating a statistical analysis of performance data by region. Provided understanding of market segmentation through competitor research; identified high impact partnerships for revenue growth; presented findings to leadership.

MACHINE LEARNING PROJECTS

- **Deep Learning Interactive Number Recognition Web App - Try**
  Convolutional Neural Networks & Data Augmentation in TensorFlow, Flask Framework, Web Development, Python
- **Machine Learning Movie Recommendation System, Detecting User Taste - GitHub, Example**
  Collaborative Filtering via Singular Value Decomposition & Stochastic Gradient Descent, Linear Algebra, Python
- **Predicting Wine Quality Through Ensemble Deep Learning - GitHub**
  Deep Neural Network Meta-trainer with 3 base models: Random Forest, GBM, Neural Network & Data Visualization, Python
- **Summary Generator and Sentiment Analysis Natural Language Processing Web App - Try**
  Initially created to analyze student government feedback at UCLA, Web Development, Natural Language Processing in Python

LEADERSHIP

UCLA Impact Investing Group**:** *VP of Education, Head of Sourcing & Due Diligence, Advisor* — *August 2020 – September 2021*
UCLA Student Government: *Director of Technology Impact, Director of Outreach* (**1, 2, 3, 4**) — *January 2019 – June 2021*
UCLA Undergraduate Mathematics Students Association: *Mathematics Mentor* — *July 2020 – June 2021*

EDUCATION

University of California, Los Angeles (UCLA) – Department of Mathematics — Los Angeles, CA
Bachelor of Science in Financial Actuarial Mathematics: GPA 3.77/4.0 | Dean's Honors List x7 | GMAT: 740 — *March 2021*
UD Coursework: Linear Algebra, Probability, Statistics, Numerical Methods, Real Analysis, Financial Mathematics
Kellogg School of Management, Northwestern University – Kellogg Future Leaders Deferred MBA (2025) — Evanston, IL

Skills: R, Python, SQL, Tableau, Looker, HTML, Git, A/B & Hypothesis Testing, Unsupervised & Supervised Machine Learning
Interests: Data Science, Analytics, Product Management, Entrepreneurship, FinTech, Music Production, Flute, Table Tennis, Puns
Self-Learning: Data Structures & Algorithms and Object Oriented Programming (MIT OCW), Neural Networks, Statistical Learning