

# KUNAL RAI

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## EDUCATION

### Rice University

2017 - 2021

#### B.S. Electrical and Computer Engineering, Specialization in Data Science, Minor in Business

**Relevant Coursework:** Random Signals & Processes, Learning From Sensor Data, Operations Research and Optimization, Algorithmic Thinking, Data Analysis, Signals, Systems & Learning, Financial Accounting, Marketing, & Economics

## EXPERIENCE

### Engineering Product Management Intern - Cisco

May 2020 - August 2020

- Led multi-disciplinary product programs from concept to customer ship, and manage R&D expenses in excess of \$60K
- Created Python tools to automate the handling and estimation of compliance & re-certification costs, cut time and resources dedicated to manually conduct calculations of re-certification costs by 50%
- Managed cross-functional teams; ensured engineering planning is structured and effective, and that programs are in sync with regards to risk mitigation, quality, and business unit coordination
- Started internal process improvements and data integrity standards to promote future automation of general metric tracking, reducing time devoted to upkeep of dashboards by 25%

### Data Science Intern - Chevron Corporation

May 2019 - August 2019

- Developed machine learning models to predict total production of erratic, non-declining oil wells with 25% mean error (Python)
- Created data pipeline to directly predict oil well production from raw well data using Spark and SQL
- Utilized Random Forest and XGBoost models to optimize well data for oil decline curve analysis using DataRobot

### Software Engineering Intern - Lockheed Martin (Secret DOD Clearance)

May 2018 - August 2018

- Designed and developed a standalone tool to automate and predict monetary value of F-35 software changes worth \$50M+
- Reduced manual verification time by 65% by aggregating estimations, user experiences, and feedback (VBA)
- Analyzed the F-35 controls system software updates integrity and tested redundancy through flight simulation

### Data Science Research Assistant for Professor of Finance - Jones Graduate School of Business

Jan 2019 - Present

- Developed topic modeling and sentiment analysis models for corporate sustainability reports to identify inconsistencies
- Reduced data filtering time by 75% through efficient pre-processing algorithms using Dask and PostgreSQL
- Conducted spatial analysis on location data to determine relationships between isolated individual movement (Python)

## SKILLS

### Languages & Frameworks Software & Skills

Python, Spark, SQL, TensorFlow, Keras, NLTK, XGBoost, spaCy, Git, & Visual Basic  
DataRobot, Azure, AWS, Technical Program & Product Management, & Graphic Design

## PROJECTS

### Extractive Text Summarization of 10-Q Documents

- Created pipeline for extractive summarization of 10-Q documents to reduce knowledge barrier for individuals new to investing
- Created novel semi-supervised LDA model to replicate human extraction on 10-Q reports with mean recall scores of 0.3

### Convolutional Neural Network for Audio Classification

- Developed multi-staged modeling process to handle mislabeled training data and classify audio files using spectrograms
- Achieved 94% classification accuracy with unique convolutional neural network architecture, 2nd place in Kaggle competition

### Competitive Analysis & Market Research: Nut Free Granola Bars

- Created business and marketing plans for nut free granola company with market analysis and industry growth trends
- Conducted A/B Testing on product designs to determine most appealing features of the bar and packaging (n=1000)

## LEADERSHIP & EXTRA-CURRICULAR

**President - IEEE**, Led department initiative to centralize communications between faculty & students

2019 - Present

**Product Designer** - Led design teams and developed designs that produced \$10k in funds for clubs

2018 - Present

**Rice Undergraduate Investment Fund - Portfolio Review Associate**, Technology & Consumer Sectors

2018 - 2020

**Rice FinTech - Secretary**, Developed curricula to teach students about fintech, coding, and finance

2017 - 2018

**PWC Presentation Competition** - Placed 3rd out of 800 submissions for best final oral presentation at Rice

2018