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DINESH DAULTANI

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PROFESSIONAL EXPERIENCE

Research Scientist (Tokyo, Japan) **Rakuten (RIT)** **Apr 2018 – Present**

Technologies: Keras, CNN, LSTM, Computer Vision, Bandit, Time Series, TensorFlow, Scikit-learn, Docker

- **Summary:** Use traditional machine learning, deep learning, and reinforcement learning to solve Rakuten's research problems. Collaborate with other researchers to deliver diverse systems for various business units.

PROJECTS

Contextual Multi-Armed Bandits

- Develop a contextual bandit model based on state-of-the-art methods to optimize ad banners on Rakuten e-commerce websites for tens of millions of users based on users' historical data
- Developed production system to be used in real-time low latency application and performed thorough testing

Anomaly Detection in Cybersecurity

- Develop a user and entity analysis (UEBA) tool using k-means clustering and multi-modal (CNN & LSTM) learning to detect anomalies in tens of thousands of Rakuten employee's terminals from network text logs

Credit Scoring

- Lead a team of engineers for the backend and frontend development of a production system
- Increased the approval rate of credit card merchant customers by 5% by developing a credibility scoring model and segmentation of merchants that led to an increase in revenue of millions of dollars

Market Trading

- Gained more than 7% ROI / year in daily trading of products such as forex currency pairs, bonds, and indexes by developing end-to-end machine learning models (RNN & Traditional ML) based on historical market macroeconomics data for assets under management (AUM) of tens of millions of dollars

PATENTS

- **Ensembles Optimization using Genetic Algorithms:** Invented a new approach to find the best-optimized combination of weak supervised models by using evolutionary search and tournament selection approach based on weighted metrics, PCT JP2020/001767, filed on 2020/01/20
- **Anomaly Detection in Cybersecurity:** Invented a new approach for anomaly detection based on the change in user probabilities using multi-modal neural networks (CNN & LSTM), PCT JP2020/037004, filed on 2020/09/29

CO-CURRICULAR

- **AI Trainer:** Delivered training on image classification & object detection using convolutional neural networks and fundamentals of ML in Rakuten for 100+ employees dispersed around different Asia-Pacific locations
- **RL Study Group:** Founder and organizer of Reinforcement Learning study group and paper reading sessions for Rakuten's machine learning community employees

Machine Learning Engineer (CA, USA) **CRTCL** **Sept 2017 – Dec 2017**

Technologies: Python, AWS, Natural Language Processing, Data Pipelines, Sentiment Analysis, Git

- Worked with a Blockchain startup where I built data pipelines, applied natural language processing and identified trading patterns in sentiments to trade on cryptocurrencies such as Bitcoin, Ethereum, etc.

Data Scientist Intern (IL, USA) **RR Donnelley** **Jan 2017 – Aug 2017**

Technologies: Python, Scikit-learn, Tableau, Experimental Design, MS Excel, R, Feature Engineering

- Worked with marketing research team to target customers for various healthcare, insurance, and retail store clients by applying machine learning, experimental designs, segmentation and statistical modeling

- Trained different optimized supervised and unsupervised machine learning models based upon the problem to increase the responses of direct mail marketing campaigns for various clients

Research Assistant (IL, USA) **Illinois State University** **Aug 2016 – May 2017**

Technologies: Python, computer vision, OCR, Theano, Caffe, image transformation, optimization

- Helped the professor in reproducing state-of-the-art research papers in computer vision on MNIST & CIFAR-10 datasets, utilizing Theano & Caffe machine learning libraries on Nvidia Titan X GPUs
- Trained models to optimize the error rate by combining new image transformation ideas

Graduate Teaching Assistant (IL, USA) **Illinois State University** **Aug 2016 – May 2017**

- Taught undergrad students Java programming language and basics of computers in the introductory programming course labs
- Debugged the students' programming code and helped them to identify & rectify their errors by explaining logical constructs of object-oriented programming language

EDUCATION

Normal, Illinois, USA **Illinois State University** **Aug 2015 – May 2017**

- Master of Science in Information Systems, May 2017. GPA: 3.92/4
- Graduate Coursework: Machine Learning; Research Methodologies; Advanced Database Management

CO-CURRICULAR

- Invited talk in Python Conference (PyCon 2017) on master's project at Intel-sponsored booth
- Intel's Student Ambassador of Artificial Intelligence
- President of Indian Student Association RSO at Illinois State University
- President and Founder of Machine Learning student interest group under ACM/AITP Society
- Member of Graduate Student Advisory Council (GSAC) at Illinois State University
- Invited speaker in Internationalization Student Panel at Illinois State University

Indore, India **RGPV** **Aug 2010 – June 2014**

- Bachelor of Engineering in Computer Science, June 2014. GPA: 7.43/10
- Undergraduate Coursework: Algorithms; Data Structures; Cloud Computing; Operating Systems; Networking

CO-CURRICULAR

- Certificate of Honor for designing a website for the annual technological festival held at C.D.G.I.
- Winner of annual Chess competition in C.D.G.I.
- Winner of Robo-War competition in a national level tech-fest event

ACADEMIC PROJECTS

Technologies: Python, R, Scikit-learn, CNN, RNN, Time Series Analysis, Theano, Caffe, NLTK, ggplot2

- **Image Classification (2017):** Implemented convolutional neural networks and recurrent neural networks to predict and visualize the images in CIFAR-10 dataset.
- **Stock Predictions (2017):** Perform sentiment analysis for news headline of previous 10 years NY Times news articles and predict Dow Jones (DJIA) index values based on the sentiment scores and historical prices.
- **NIPS Conference Data Mining (2016):** Gathered research papers through the web crawling of NIPS conference website, extracted and cleaned valuable information about the published papers, and formulated various findings in the form of graphs.

ADDITIONAL EXPERIENCE

- **Technical Analyst at ISU (Dec 2015 – Aug 2016):** Worked for the University as an administrator on various university applications such as Oracle (Peoplesoft Enterprise), WebTMA (Inventory Management), and Sakai.
- **Programmer Analyst at Cognizant (Feb 2015 – Jul 2015):** Worked on mainframes application development in healthcare projects using JCL, COBOL, VSAM and DB2 while following agile methodology.