Pat Thontirawong

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EXPERIENCE

Data Revenue GmbH, Berlin, Germany

Senior Machine Learning Engineer / Machine Learning Engineer

SEPTEMBER 2019 - PRESENT

- Developed machine learning systems to help medical researchers:
  - Use biomarker patterns from mass spectrometry data to identify diseases
  - Analyze how gene mutation patterns relate to specific diseases
  - Run in-silico experiments and collect results through a web API
- Designed and implemented a testing system to find profitable electricity trading strategies
- Deployed distributed machine learning system using Kubernetes cluster on AWS Elastic Kubernetes Service

Dataginjo LLC, Richfield, OH

Founder / Data Scientist

JULY 2016 - PRESENT

- Developed machine learning models in AzureML for clients in education and outdoor recreation industries to support marketing and supply-chain initiatives
- Conducted market research for client in outdoor recreation industry
- Studied how geographical location and demographics affects customer behavior
- Tracked website A/B testing using Adobe analytics
- Built business intelligence system including performance dashboards using data from SQL Server and Quickbooks
- Exploring and developing machine learning products in areas including currency exchange, cryptocurrency, and sports betting, including:
  - Using reinforcement learning algorithms such as Proximal Policy Optimization to trade foreign currencies
  - Identifying undervalued odds in European soccer betting market using data from EA Sports' FIFA video game

National Business Institute Inc., Eau Claire, WI

Senior Business Analyst

SEPTEMBER 2015 - JULY 2016

- Developed machine learning models in Python Scikit-learn and Rapidminer to predict customers' response to brochure mailings for education company
- Designed model using gradient boosting to predict subscription renewals

- Validated and tested predictive models using Python and SQL Server
- Set up a Rapidminer server to use predictive models in production. This includes scheduling, planning, and optimizing computational resources
- Built customer lifetime value (LTV) dashboard for transactional and subscription customers using data stored on SQL Server
- Developed data visualization using Excel Power Query, Matplotlib, Bokeh
- Wrote SQL Server and MDX OLAP queries to support marketing decisions

L.E. Phillips Career Development Center, Eau Claire, WI

System Administrator

SEPTEMBER 2013 - SEPTEMBER 2015

- Performed system administration and maintenance for Windows Server, SonicWall, SQL Server, MySQL, Visual FoxPro
- Implemented MySQL database to track job placement for disabled and disadvantaged applicants
- Supported accountants in using Sage 100 ERP and Crystal Report
- Advised CEO on expansion to packaged food business
- Led Salesforce implementation in sales department
- Developed performance dashboard for CEO using SQL, VBA ,and Qlikview
- Developed model to optimize wood-cutting for woodworking department
- Developed pricing tool for printing and woodworking departments

VNET Venture Capital, Bangkok, Thailand

Investment Manager

OCTOBER 2008 - APRIL 2013

- Identified investment opportunities in small- and medium-sized companies in Thailand and Asia-Pacific region including companies in manufacturing, IT, biotechnology, retail, healthcare, and food industries
- Advised medium-sized companies on raising additional debt and equity in from investors, including going public in the Stock Exchange of Thailand
- Assisted IT system integrator in raising equity from Japanese conglomerates
- Advised start-up companies on corporate finance, project evaluation, performance measurement, and efficiency improvement
- Extracted data from multiple sources such as Thomson Reuters and organized into a database for internal users
- Worked with organizations such as Thai Venture Capital Association and Thai National Innovation Agency to promote venture capital activities in Thailand

Stern Stewart and Co., Bangkok, Thailand

Senior Analyst / Analyst

JUNE 2004 - JANUARY 2006

- Implemented an Economic Value Added (EVA) Performance Measurement System for state-owned electricity company in Thailand (US$10bn asset size) and the third largest cement producer in Thailand (US$2bn asset size)
- Designed holding company structure for state-enterprises under Thai Ministry of Finance to find alternative sources of funds
- Analyzed EVA of 35 state-owned enterprises focusing on financial institutions
- Conducted workshops on how to improve financial performance for managers from state-owned enterprises under Thai Ministry of Finance

EDUCATION

Harvard University, Cambridge, MA

MLA in Software Engineering

JUNE 2016 - MAY 2020, GPA: 3.93/4.00

- Trained a deep reinforcement learning model to self-control a simulated robotic arm to track and reach an object
  - Model is based on Deep Deterministic Policy Gradient (DDPG) with Hindsight Experience Replay (HER) to speed up the training time
  - Tools used: TensorFlow, Keras, NVIDIA CUDA GPU
- Developed a web application to visualize academic citation graph network
  - User can search and analyze citation network of more than 2 million medical research stored in PubMed
  - Tools used: NetworkX, VueJS, D3JS, Flask, MySQL, AWS, Heroku, Luigi
- Developed a recommender system that suggests a set of recipe ingredients based on data from epicurious.com
  - System uses Latent Dirichlet Allocation (LDA) topic modeling to classify food ingredients in different cuisines and dishes
  - Tools used: Pandas, Numpy, GraphLab, PyLDAVis, Scikit-Learn
- Trained Human Activity Recognition models using sensor data to predict posture and activity
  - Models use machine learning algorithms such as Support Vector Machine (SVM), Gradient Boosting, and Random Forest
  - Tools used: AzureML, Pandas, Numpy, Matplotlib, Seaborn, Scikit-Learn

Mahidol University, Bangkok, Thailand

PhD in Management (Finance)

2009 - 2013, GPA: 3.91/4.00

- Dissertation Topic: Three Essays on the Corporate Governance of Asian Firms
- Two of the essays are published in peer-reviewed journals in finance

The University of Illinois at Urbana-Champaign, Champaign, IL

MBA (Finance)

2006 - 2008, GPA: 3.91/4.00

Thammasat University, Bangkok, Thailand

BBA (Accounting)

2000 - 2004, GPA: 3.85/4.00

SKILLS

- Programming language:
    - Proficient in Python including: TensorFlow, Keras, Pandas, Numpy, Jupyter, Scikit-learn, NetworkX, Matplotlib, Plotly, Seaborn, NLTK, SpaCy, Gensim, PyTest, Flask, Django, Luigi, Dask
    - Proficient in Javascript including: ReactJS, NextJS, Material-UI
    - Working knowledge of Java, C, C++, R, MATLAB, SAS
- Database:
    - Proficient in SQL Server, MySQL, PostgreSQL
    - Trained on Neo4j, MongoDB, Spark, Hadoop, GraphQL
- Cloud platform and DevOps:
    - Deployed systems on Heroku, AWS (RDS, EKS, EC2, Elastic Beanstalk, S3), Google Cloud (App Engine, Firebase), AzureML, Zeit Serverless
    - Worked with Kubernetes and Docker on AWS EKS
- Software development tools:
    - Git, GitLab Pipeline, Visual Studio Code, IntelliJ, PyCharm, Rstudio, Google Colab
- Data science software: Rapidminer
- Statistics software: STATA, SPSS, Gretl
- Business software: MS Office, PowerBI, QlikView, Tableau, Quickbooks

PEER-REVIEWED PUBLICATIONS

- Corporate Governance and Stock Returns in Asia (with Roy Kouwenberg and Roelof Salomons), Quantitative Finance (2014)
- Group Affiliation and Earnings Management of Asian IPO Issuers (with Roy Kouwenberg), Review of Quantitative Finance and Accounting (2016)
- Bring Your Own Beer: The Effects of Consumer Expertise on Artificial Intelligence Based Product Recommendation Systems (with Sydney Chinchanachokchai and Punjaporn Chinchanachokchai), submitted to European Journal of Marketing

PROFESSIONAL AFFILIATIONS

- CFA Society of Thailand, Regular Member from 2011 to 2016
- Beta Gamma Sigma, International Honor Society for Business Program

ADDITIONAL

- Work Authorization Status: U.S. Permanent Resident
- Fluent in English and Thai
- Interests include SCUBA Diving (PADI Divemaster), Black and White Photography, Modernist Cooking, Homebrewing, Beer Tasting (Certified Beer Server, Cicerone Program)