Cheng-Pang (Tego) Chang

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*A data scientist with **5+ years of experience in product analytics & management**, passionate about extracting insights from data to **inform basketball decisions**.*

Education

Duke University, Durham, NC, ***Master of Interdisciplinary Data Science (MIDS)***; **GPA: 3.8/4.0**   **Expected May 2023**

Duke Sports Analytics Club   Sep. 2021 - Present

• Investigated the utilization of analytics in coaching and player development by the Duke Men's Basketball with a focus on employing video analytics to determine the best shots during transition offense and utilizing visualization BI tools to analyze shot distribution and percentage at various court locations.

NBA Golden State Warriors Internship Conference   Jul. 2021 - Aug. 2021

• Gaining insights into basketball operations, front office management, and the application of analytics in both business and court aspects of an NBA team.

Projects (GitHub)

Predicting NBA Players' Salary in the Free Agency

• Developed a team-customized hierarchical linear regression model using R to predict NBA players' salary based on traditional, advanced statistics, and teams' salary cap over the past 10 years, achieving a testing accuracy of 77%.

• Analyzing the overpaid and low-balled cases and identifying the metrics that need to be additionally considered to further explore the topic.

Member Churn Prediction for Under Armour

• Identified UA customers with a high likelihood of churning within six months based on their purchasing behavior in the company's marketing dataset.

• Built a logistic regression model using R to identify key factors contributing to churn rate, achieving an AUC score of 0.88.

G-league Indicator to NBA Success and Player Injury Prediction

• Conducted Two-Sample T-Test analysis to determine the most significant statistical indicators for NBA success among G-League players with two-way contracts.

• Proposed interdisciplinary collaboration with coaches, players, and medical experts to develop a machine learning model that predicts the likelihood of basketball player injuries and their severity.

Optimizing NBA Team Performance: Analyzing Conference Strength and Offensive Rebounding Strategy

• Developed a historical BI dashboard analyzing conference strength's effect on regular season records against playoff/non-playoff teams and point margin in NBA games (2005-2020).

• Assessed machine learning models to optimize offensive rebounding strategy, while balancing the trade-off between second-chance points and transition defense.

Experience

Data Scientist – Explainable Machine Learning   Sep. 2022 – Present

2nd Order Solutions *(Duke MIDS Capstone Project)*   USA

• Evaluated the performance of Explainable Boosting Machine (EBM) and Gradient Boost Machine (GBM) in execution

duration and interpretability by applying them to a classification prediction problem.

Product Data Scientist Intern – IoT Risk Prediction   Jun. 2022 - Aug. 2022

TeleSign   USA

- Proposed to the CTO a business opportunity in IoT security by presenting a project – *Mobile Auth for Wi-Fi Access*.

- Realized risk evaluation of every connected Wi-Fi device by utilizing unsupervised/supervised machine learning and TeleSign's strength in two-factor authentication.

Senior Product Manager – Document AI   Sep. 2020 - May 2021

Foxit Software (US company based in Fremont, CA)   Taiwan

- Built and released an AI SaaS for contract review, *iDox.ai*, by leading a team to collaborate with external stakeholders to integrate legal domain knowledge into the outcomes from NLP models.

Principal Product Manager – Gaming/Sports Betting Data Analytics   May 2020 - Aug. 2020

GE-MING Digital Media   Taiwan

- Managed a team of five data scientists and transformed internal/external business problems into their analytical research topics.

- Presented the team's outcome to the CTO and technical/non-technical stakeholders for production deployment and drove cross-functional teams to meet schedules.

- Increased the total revenue of six gaming/sports betting sites by 12.56% by deploying a game recommender system, churn prediction and retention strategies, and a gaming fraud detection algorithm.

Software Engineering Product Manager – Wi-Fi Router Analytics   Aug. 2017 - Apr. 2020

NETGEAR (US company based in San Jose, CA)   Taiwan

- Conducted the company's data-driven decision-making process by visualizing data outcomes, identifying key metrics, and extracting business insights for the executives of the engineering and marketing teams.

- Verified the data accuracy by collaborating with data engineers to troubleshoot issues during the cloud data processing pipeline.

Leadership and Awards

- Promoted among managers of 20+ at NETGEAR for leading 10+ software engineers to develop data analytics projects, deploying them to production, and providing insights for several teams at the company.
  Key projects include:

  - *Wi-Fi Connection Analytics:* accelerated the support team's remote troubleshooting process for wireless connection failures through the visualization of wireless data.

  - *Onboarding Method Analytics*: guided the campaign strategies for the marketing teams by identifying customers' preferred engagement channels and frequencies.

- Managed teams of 15+ members, including R&D, QA, UI/UX, PM, and Marketing, at Foxit Software, bringing the AI contract review service, *iDox.ai*, to market in six months.

Knowledge and Skills

Data Science Machine Learning, Statistical Modeling and Inference, Hypothesis Testing, Causal Inference, Experimentation and A/B Testing, Data Visualization and Storytelling, Deep Learning, AWS, Azure, DevOps, MLOps.

Product Management User Growth, Customer Lifetime Value (LTV), Marketing Analytics, Agile/Scrum Development.

Programming and Tools Python (scikit-learn, PyTorch), R, SQL, Tableau, Databricks AutoML, Microsoft Office Suite.