Ou Stella Liang

Ph.D. Candidate in Information Science

oustella@gmail.com oustella.github.io New York, NY 10075

SUMMARY

Ph.D. candidate specialized in sequence/time series data mining. Seven years of healthcare finance and project management experience.

EDUCATION

Drexel University
July 2018 to Current
Ph.D. Information Science 2022
GPA: 4.0/4.0
Graduate College Doctoral Fellowship - Gold (1 of 4 awardees across the University)
Upsilon Pi Epsilon Honor Society
Coursework: Data Acquisition and Preprocessing (A+), Machine Learning (A+), Data Analysis at Scale (A+), Social Network Analysis (A+), Deep Learning Specialization Certificate (Coursera Credential ID YH3G7VXLNV2U)

Johns Hopkins University
Aug. 2009 to May 2011
Master Health Administration 2011
GPA: 3.8/4.0
Upsilon Phi Delta Honor Society

Peking University
Sept. 2005 to July 2009
Bachelor of Science Applied Pharmacy 2009
GPA: 3.6/4.0
AstraZeneca Rising Health Economist Fellowship

EMPLOYMENT

Merck & Co., West Point, PA
Data Science Intern, Global Vaccine Technical Operations Data COE
Apr. 2020 to June 2020

- Predicted vaccine production yields with multivariate, temporal spectroscopy data using machine learning algorithms, achieving an 80% accuracy.

Johns Hopkins Medicine, Baltimore, MD
Manager, Financial Analysis Unit
June 2016 to May 2018

- Led capital planning projects for institutional-level investment such as opening a new clinical building and purchasing health IT software. Prepared financial models and business plans to predict the ROI. Presented recommendations to senior executives.
- Supervised 3 direct-reports and managed concurrent projects. Ensured on-time deliverables by proactively identifying requirements and rate-limiting steps.
- Co-developed automated departmental financial analysis pipelines with SQL macros and Excel models.

Project Administrator, Financial Analysis Unit
June 2014 to May 2016

- Served as the program manager to develop a clinical support software for individualized Cardiology care. Led design sessions to identify product requirement with stakeholders and managed program progress using Trello. Prepared and won a competitive internal grant of $100,000.
- Led a team of 5 to develop a 10-year financial forecast by clinical services for a foreign joint venture hospital using local demographic and hospital historical data, which resulted in a $300 million operation agreement. Reviewed JV legal documents related to financial arrangement.

Junior/Senior Analyst, Financial Analysis Unit
June 2011 to May 2014

- Performed data acquisition and scrubbing using SQL from the EHR data warehouse to predict multi-year patient volumes and revenues by clinical care pathways for clinical and operation improvement projects.
- Developed an interactive Tableau dashboard that allows multi-level drill-down on operating room supply usage trends using Epic and SAP data. Uncovered 5% cost saving opportunity in the neurosurgical product lines.

RESEARCH PROJECTS

Road Injury Prevention Using Naturalistic Driving Data
July 2018 to Current

- Preprocessed 41,000 trips from 20+ dataframes with 600+ attributes and engineered features for predictions using Pandas.
- Applied ML algorithms to determine feature importance for predicting road injuries using NumPy and scikit-learn. Corrected for data imbalance and improved model recall by 4% with grid search. Work published in ICHI 2019.
- Ongoing focus is on developing novel deep learning architecture for time series analyses using 10 million multimodal high-frequency sensor data with Tensorflow.

Technology and Maternal Opioid Use
Jan. 2019 to Current

- Crawled 25 years of online discussion data and performed thematic analysis o provide the first contextualization of the challenges related to unsupervised drug use recovery during pregnancy.
- Conducted social network analyses and visualization using NetworkX and Gephi. Identified distinct patterns in peer support by the metadata and statistical features of the discussion texts.
- Collaborated with a clinical team and implemented an online peer support group in Facebook. Authored a research proposal to perform randomized control study and evaluate the group's clinical impact on patients' recovery.

Visualize Medication Use During Pregnancy
May 2017 to Aug. 2018

- Mined 250 million patient records from the Truven Health MarketScan Research Databases using SAS macros and an HPC cluster. Extracted a patient cohort of 236,000 women for analysis by iteratively building selection criteria on ICD-9 codes and RedBook therapeutic classes.
- Transformed the claims data using R to identify sequential prescription events and created temporal data structure for visualization.
- Developed the first sequence visualization of pregnant women's prescription drug use patterns in R. Won the second place of the student paper competition at the AMIA Informatics Summit 2019.

SKILLS

TECHNICAL: Python, R, SQL, Java, Bash, SAS, HTML, ArcGIS
FINANCIAL: financial modeling, return on investment, market analysis

SERVICES

Code for Philly 2020 Data Hackathon
Programmer
Feb. 2020 to Mar. 2020

- Collaborated on codes visualizing temporal trends of opioid overdose in Pennsylvania.

Python Data Acquisition and Preprocessing, Drexel University
Teaching Assistant
Sept. 2019 to Dec. 2019

- Led 2 course assistants to tutor a cohort of 120 students and graded coding assignments providing constructive feedback.

IEEE 7th International Conference on Healthcare Informatics
Publication Co-chair
Feb. 2019 to June 2019

- Tracked the submission status of 120+ papers and liaisoned between 7 track chairs and the publication company to create the conference proceedings.

Louie's Legacy Animal Rescue
Volunteer Photogorapher
Sept. 2020 to Current

- Produced lively portraits of rescue animals using a DSLR to enhance their probability of adoption.

Ou Stella Liang

Ph.D. Candidate in Information Science

oustella@gmail.com oustella.github.io New York, NY 10075

PUBLICATIONS AND STANDARDIZED TESTS

Publications

- (Accepted) **Liang OS**, Richitt H, Yang CC, Bennett DS, Online Social Support Seeking among Pregnant Women Coping with Opioid Misuse, International Conference on Health Informatics 2020
- Meredith C Meacham, PhD, MPH, **Ou Stella Liang**, MHA, Mengnan Zhao, BS, Christopher C Yang, PhD, Johannes Thrul, PhD, Danielle E Ramo, PhD, Connectedness Based on Shared Engagement Predicts Remote Biochemically Verified Quit Status Within Smoking Cessation Treatment Groups on Facebook, Nicotine & Tobacco Research, , ntz193, https://doi.org/10.1093/ntr/ntz193
- Jazayeri, A., **Liang, O.S**. & Yang, C.C. Imputation of Missing Data in Electronic Health Records Based on Patients' Similarities. J Healthc Inform Res 4, 295–307 (2020). https://doi.org/10.1007/s41666-020-00073-5
- *Student paper competition, second place*: **Liang OS**, Sheffield JS, Taylor CO. Detecting Patterns of Prescription Drug Use During Pregnancy and Lactation with Visualization Techniques. AMIA Summits on Translational Science Proceedings 2019 (May 6, 2019): 478–87.
- Monselise M, **Liang OS**, Yang CC. Identifying important risk factors associated with vehicle injuries using driving behavior data and predictive analytics. In Proceedings of the 7th IEEE International Conference on Health Informatics. Xi'an, China, 2019
- Yang CC, **Liang OS**, Ontanon S, Ke W. Predictive Modeling with Vehicle Sensor Data and IoT for Injury Prevention. In Proceedings of the 4th IEEE International Conference on Collaboration and Internet Computing. Philadelphia, PA, USA, 2018. http://dx.doi.org/10.1109/CIC.2018.00047.
- Rao K, **Liang OS**, Cardamone M, Nelson WG, et al. Cost Implications of PSA Screening Differ by Age. BMC Urology 18, no. 1 (May 9, 2018): 38. https://doi.org/10.1186/s12894-018-0344-5.
- Voong KR, **Liang OS**, Dugan P, Torto D, et al. Reducing Unnecessary Healthcare Expenditure: Thoracic Oncology Multidisciplinary Clinic Reduces Resources Used in the Diagnosis and Staging of Patients with Non-Small Cell Lung Cancer. International Journal of Radiation Oncology • Biology • Physics 99, no. 2 (October 1, 2017): S9–10. 10.1016/j.ijrobp.2017.06.038.
- Tekes A, Jackson E, Ogborn J, **Liang OS**, Bledsoe M, Durand D, Jallo G, Huisman T, How to Reduce Head Computerized Tomography Orders in Children with Hydrocephalus using the Lean Six Sigma Methodology: Experience at a Major Quaternary Care Academic Children's Center, American Journal of Neuroradiology (AJNR), 2016 Jun, 37(6), 990–996. https://doi.org/10.3174/ajnr.A4658
- Babiarz L, **Liang OS**, Intihar P, Yousem D, Neuroimaging Utilization and Hospitalization Cost for Patients Admitted with Stroke and Transient Ischemic Attack. Radiological Society of North America (RSNA) 2014 Scientific Assembly and Annual Meeting - Chicago IL. http://archive.rsna.org/2014/14015782.html

Standardized Tests

- GRE: verbal reasoning 96%, quantitative reasoning 94%, analytic writing 93% (2017)
- Passed the Chartered Financial Analyst (CFA) Level I exam (2016)
- GMAT: 720/800 (94%), integrated reasoning 93%, analytical writing 91% (2013)