Lang-Chi Yu

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Education

University of Southern California *Los Angeles, California*

M.S. in Computer Science *Aug. 2018 — Dec 2019*

National Taiwan University (NTU) *Taipei, Taiwan*

M.S. in Communication Engineering *Sep. 2015 –– Jun. 2017*

- Master thesis: "Abstractive Headline Generation for Spoken Content with ASR Error Modeling[1]."
- Proposed and implemented novel attentive RNN architecture with Lua Torch, which incorporated automatic speech recognition (ASR) error modeling mechanism to learn from text data instead of from large number of spoken documents with reference headlines.
- Generated the finding that proposed architecture outperformed RNN and ARNN models that were trained on pure text data with an increase in ROUGE-1 (correctness metric for summarization) from 21.87 to 22.89.

B.S. in Electrical Engineering *Sep. 2010 –– Jun. 2014*

Experience

Amazon Web Services (AWS) *Bellevue, Washington*

Software Development Engineer *Feb 2020 ––*

- Developed website UI components and RESTful APIs with Redux, Node.js, DynamoDB, and Java backend to construct a user-friendly interface of Infor Enterprise Asset Management (EAM) system to facilitate data center operations, such as creation and update of assets and work orders, asset configuration and replacement, etc.
- Developed Javascript modification of Infor EAM frontend UI, i.e. Extensible Framework to control form content and enable frontend input validation for asset data, and developed EAM database poller based on Java to fetch, validate, and send new asset data to data consumer's AWS SQS.
- Designed and developed migration plan of existing EAM interface website from internal host services to native AWS services based on AWS Fargate for better support, extensibility, and integrability with other native AWS services.

Amazon Web Services (AWS) *Bellevue, Washington*

Software Development Engineer Intern *May 2019 –– Aug. 2019*

- Developed new website modules with React, Node.js (Babel and Webpack), and DynamoDB for new functionalities of waste storage and management interface for AWS data centers around the globe.
- Developed unit testing for website modules with Jest and Enzyme, and increased frontend unit test coverage from none to 50%.

Research Center for Information Technology Innovation, Academia Sinica *Taipei, Taiwan*

Research Assistant *Aug. 2017 –– Jul. 2018*

- Devised a new approach to hit song prediction problem, i.e., predicting song's popularity score in a popular music market based on raw audio (mel-spectrograms), by incorporating song ranking model into previous regression model as Siamese convolutional neural networks[2].
- Collaborated with Machine Learning Research Team of KKBOX Inc., Taiwan, implemented the Siamese CNN models with Python TensorFlow, which made great improvement in Kendall's tau (performance metric for ranking songs) from 0.1080 to 0.2421 compared to previous simple deep models on a commercial song dataset of KKBOX.
- Constructed a standardized and publicly-available hit song prediction benchmark with Million Song Dataset and a YouTube crawler.

Skills

Programming

- Python: Django, Keras, TensorFlow, scikit-learn, Pandas
- JavaScript/Typescript: Node.js, Babel, Webpack, Redux, React, Jest, Enzyme, Semantic UI
- Ruby: Ruby on Rails (RoR)
- Java, C++, Lua (Torch), Shell Script
- Version control: Git

System Management

- Cloud Services: AWS EC2, Fargate, Lambda, Cloudformation, Cloudwatch, RDS, System Manager, SNS, SQS
- Database: Amazon DynamoDB, Microsoft SQL Server, PostgreSQL, MySQL, Oracle SQL
- Operating Systems: CentOS, Debian, Ubuntu
- Web servers: Apache, NGINX

[1] Lang-Chi Yu, Hung-yi Lee, and Lin-shan Lee, "Abstractive Headline Generation for Spoken Content by Attentive Recurrent Neural Networks with ASR Error Modeling," IEEE Workshop on Spoken Language Technology, Dec. 2016.

[2] Lang-Chi Yu, Yi-Hsuan Yang, Yun-Ning Hung, and Yi-An Chen, "Hit Song Prediction for Pop Music by Siamese CNN with Ranking Loss," arXiv preprint arXiv:1710.10814 (2017).