Kevin Yen

yenkevin1203@gmail.com | LinkedIn | GitHub | Site | New York City, New York

Summary

- U.S. citizen with extensive experience in applied science and distributed systems.
- Diverse skill set including Ad Tech, Data Science, Computer Vision, and Natural Language Processing.
- Successfully completing business-critical end-to-end projects encompassing domain understanding, problem design, data pipeline development, and at-scale model training and deployment.

Work Experience

Yahoo! New York City, New York

Principal Research Engineer *Feb 2020 – present*

- ad tech Improved model for shaping incoming traffic to ad exchange, resulting in a 50% reduction in traffic and $30M/year in cost savings while maintaining revenue neutrality.
- ad tech Designed and developed an offline estimation system for running multiple experiments and estimating impacts before creating online test buckets, enabling efficient communication with business team and enabling the product owner to fully understand potential outcomes of deployments.
- ad tech Designed and prototyped an optimization model to improve ad exchange business metrics (eCPM, RPM, etc.), resulting in collaboration with the engineering team and providing insight for business and product owners to understand the potential impact and expectations of the opportunity.
- creative Developed and implemented advanced text and image classification models for ad creative policy violation detection, resulting in a significant improvement in precision from 33% to 95% and a reduction of 82% in the workload of human agents.
- creative Developed and implemented an LSH-based algorithm that hashes similar ad creatives into the same string, resulting in a 40% reduction in human review workload and improved performance and robustness of a text classification model through the identification of noisy labels in training.
- creative Developed and implemented the training and serving pipelines for an ad creative optimization service utilizing the Bert model and kNN search, enabling users to create higher quality creatives. The serving API endpoint was also optimized to reduce latency by 1/3 of the original.
- content Developed and implemented the serving pipeline for moderating search suggestion entries, resulting in improved ability to catch new inappropriate terms and phrases compared to the previous solution.
- content Implemented a new text classification model for preemptively disabling the comment section for articles prone to attracting toxic user comments, addressing high levels of user engagement and easing pressure on the moderation team.
- content Designed and developed a new image classification model for moderating user-generated content using transfer learning from Xception and EfficientNet, resulting in a 0.8% increase in AUC compared to the production model.

Yahoo! New York City, New York

Senior Research Engineer *Feb 2019 – Feb 2020 (1 yr)*

- content Designed and developed a new image classifier for moderating user-generated content using the tf.keras module, resulting in improved performance compared to the production model and a 40% increase in training pipeline efficiency.
- content Designed and developed a new text classification ensemble model for moderating user-generated content using a custom vocab, pre-trained, and fine-tuned Bert model. The model outperformed the production model with a 1.9% increase in AUC and outperformed Google Perspective. This achievement involved an early adoption of the Bert model.
- security Designed and developed a large-scale data exfiltration detection system that utilizes synthetic attacks to identify suspicious activity for further review and investigation by domain experts.
- systems Improved system development and deployment processes through major codebase refactoring and the introduction of CICD to the application.
- systems Collaborated with the internal systems team to introduce Horovod setup to the internal Kubernetes GPU cluster for accelerated model training.

Yahoo! New York City, New York

Research Engineer *Feb 2018 – Feb 2019 (1 yr)*

- security Implemented a new TensorFlow DNN model for Yahoo!'s membership security system, achieving state-of-the-art performance for the task.
- security Created Hive UDF and data pipeline to enrich enterprise Netflow data for improved intrusion detection capabilities.
- systems Improved the internal JupyterHub system through collaboration with the Hadoop system team to introduce a new Jupyter kernel and notebook automation feature. The kernel provides a native Jupyter notebook experience in the corporate JupyterHub through a remote PySpark environment, and the automation allows for the repetition of notebook execution to obtain outputs.

Yahoo! New York City, New York

Associate Research Engineer *Jun 2017 – Feb 2018 (8 mos)*

- security Modernized the team's ML model dashboard by transitioning from a full-stack approach to simple notebook-exported HTML pages, simplifying the reporting tech stack and improving visualizations.
- systems Developed and hosted a JupyterHub service for scientists and engineers, improving the experience of interacting with large data in HDFS through PySpark.

Yahoo! Remote (Columbus, Ohio)

Part-time Contractor *Sep 2016 – Jun 2017 (9 mos)*

- systems Managed and maintained the research dataset-sharing web app at Yahoo!, "Webscope," including handling legal and security compliance for the PHP code base.

Yahoo! New York City, New York

Summer Intern *May 2016 – Aug 2016 (3 mos)*

- systems Designed and developed a system that visualizes data generated from Apache Hive queries, enabling scientists and engineers to identify anomalies and gain insights. The system utilizes C++ for core algorithms and JavaScript for both front-end (d3.js) and back-end (Express) development.
- systems Created visualizations for the ML model performance monitoring system, enabling engineers to more easily consume daily reports and observe trends and anomalies in model performance. The system was developed using PHP.

Publications

- content Fei Tan, Changwei Hu, Yifan Hu, Kevin Yen, Zhi Wei, Aasish Pappu, Serim Park, Keqian Li; MGEL: Multigrained Representation Analysis and Ensemble Learning for Text Moderation; IEEE Transactions on Neural Networks and Learning Systems, 2022
- content Thai Le, Jooyoung Lee, Kevin Yen, Yifan Hu, Dongwon Lee; Perturbations in the Wild: Leveraging Human-Written Text Perturbations for Realistic Adversarial Attack and Defense; arXiv preprint arXiv:2203.10346, 2022
- graph Xiaoqi Wang, Kevin Yen, Yifan Hu, Han-Wei Shen; SmartGD: A Self-Challenging Generative Adversarial Network for Graph Drawing; arXiv preprint arXiv:2206.06434, 2022
- graph Xiaoqi Wang, Kevin Yen, Yifan Hu, Han-Wei Shen; DeepGD: A Deep Learning Framework for Graph Drawing Using GNN; IEEE Computer Graphics and Applications, 2021
- creative Shaunak Mishra, Changwei Hu, Manisha Verma, Kevin Yen, Yifan Hu, Maxim Sviridenko; Tsi: an ad text strength indicator using text-to-ctr and semantic-ad-similarity; Proceedings of the 30th ACM International Conference on Information & Knowledge Management, 2021
- content Fei Tan, Yifan Hu, Kevin Yen, Changwei Hu; BERT-Beta: A Proactive Probabilistic Approach to Text Moderation; arXiv preprint arXiv:2109.08805, 2021
- creative Keqian Li, Kevin Yen, Shaunak Misra, Yifan Hu, Changwei Hu, Manisha Verma; BAN: Large Scale Brand ANonymization for Creative Recommendation via Label Light Adaptation; IEEE International Conference on Big Data (Big Data), 2021
- systems Keqian Li, Yifan Hu, Manisha Verma, Fei Tan, Changwei Hu, Tejaswi Kasturi, Kevin Yen; Hadoop-mta: a system for multi data-center trillion concepts auto-ml atop hadoop; IEEE International Conference on Big Data (Big Data), 2021
- creative Xuan Qin, Meizhu Liu, Yifan Hu, Christina Moo, Christian Riblet M, Changwei Hu, Kevin Yen, Haibin Ling; Political Posters Identification with Appearance-Text Fusion; arXiv preprint arXiv:2012.10728, 2020

- content Fei Tan, Yifan Hu, Changwei Hu, Keqian Li, Kevin Yen; Tnt: Text normalization based pre-training of transformers for content moderation; Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP), 2020
- content Thanh Tran, Yifan Hu, Changwei Hu, Kevin Yen, Fei Tan, Kyumin Lee, Serim Park; HABERTOR: An efficient and effective deep hatespeech detector; arXiv preprint arXiv:2010.08865, 2020

Patents

- content Fei Tan, Yifan Hu, Changwei Hu, Keqian Li, Kevin Yen; System and method for text moderation via pretrained transformers; US Patent 11,481,543, 2022
- creative Shaunak Mishra, Changwei Hu, Kevin Yen, Manisha Verma, Yifan Hu, Maxim Sviridenko, Avinash Chukka, Max Beech, Chao-Hung Wang, Hua-Ying Tsai; Performance metric prediction and content item text suggestion based upon content item text; US Patent App. 17/314,137, 2022
- security Trade Secret, 2021
- security Trade Secret, 2020

Education

The Ohio State University — Columbus, Ohio
Master's Degree, Computer Science — *2015 – 2017*

National Central University — Taiwan
Bachelor of Science, Computer Science — *2010 – 2014*

Skills

Programming: Python, Scala, Java, TypeScript, JavaScript, C++, PHP, Rust, GoLang, LUA, SQL

Technologies: AWS, Spark, TensorFlow, PyTorch, Kubernetes

Languages: English, Chinese