Lei Ding

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EDUCATION

Sichuan University   Aug. 2004 ~ July. 2007

Master: Applied Computer Technology - Computer Network   Sichuan, China

Sichuan University   Aug. 2000 ~ July. 2004

Bachelor: Software Engineering   Sichuan, China

PUBLICATIONS

- Ding Lei, Li Zhisu, Peng Jian, Shi Xianlin, Wu Wei, Jian Xiaoyu (2007). MIDP protocol analysis and optimization based on JXME and a resource discovery and transportation framework on top of it. Journal of Sichuan University: Natural Science Edition 44(4), 807-811.

- Abena AChiaa Atwereboannah, Wu Weiping, Ding Lei, Sophyanbi B. Yussif, Edwin Tenagyei. Protein-ligand binding affinity prediction using Deep Learning, 2021 18th International Computer Conference on Wavelet Active Media Technology and Information Processing (ICCWAMTIP 2021), 56.

- Wu Weiping, Ding Lei (March, 2022). Digitalization and upgrading of drug design and development by artificial intelligence. Changsha, international peptide drugs and innovation summit, oral presentation.

PATENT& SOFTWARE COPYRIGHT

- Rating of city road segments for taxi hailing based on HANA technology[i], patent NO. 120542US01

- Automatic category assignment and potential topic discovery for products based on Latent Dirichlet Topic algorithm, patent record ID. 83839165

- Simulator of bundle clicking for validating Bandit strategies in A/B testing, patent NO. 210412US01

- Reinforcement Learning Model for product recommendation considering balance between product profit and customer interests, patent NO. 210416US01

- Software copyright in China for Practice tool v1.3 of GRE analytic writing, registration NO. 2021SR1399061, certificate NO. 8121687

WORK EXPERIENCE

SAP Upscale, SAP Labs   2017.07-Present

Senior Data Scientist and Chief Data Architect

- Conducted convergence analysis of A/B testing of product bundles (products combination) that customers show decayed interests to using Epsilon Greedy, Softmax and UCB1 Bandit Algorithms for customer behavior's simulation.

- Discovered potential product bundles from click data of customers based on Apriori and FP-Growth algorithms.

- Analyzed product similarity and complement via Latent Dirichlet Allocation Model based on the products category tree and the text feature of products.

- Discovered potential product bundles based on product similarity, complement and key performance indicators(KPIs) such as product profit, velocity, acceleration, and exposure.

- Developed product bundle recommendation via Collaborative Filtering Algorithm based on short-term customer interests.

- Generated dynamic product bundles and recommended product item for customers using Deep Reinforcement Learning Algorithms to reach the balance between product profit and fulfillment of customer interests based on product features and short-term customers' behavior data.

SAP Engagement Center on Cloud Infrastructure, SAP Labs   2015.04-2017.06

Chief Algorithm Engineer and Architect

- Conducted service exception discovery model based on Multivariate Gaussian distribution and analyzed efficiency of exception handling in the system.

- Analyzed system bottleneck and optimized the service based on payload statistics and services' dependency relationship.

Big data application and algorithm optimization in SAP Nanjing Innovation Center, SAP Labs   2011.04-2015.03
Chief Algorithm Engineer and Architect

- Optimized the CONOP Program[ii] based on Simulated Annealing Algorithm used to determine relative time scale of fossil records, and conducted a parallelization proposal based on Monte Carlo process of sampling: co-innovation of Nanjing Institute of Geology and Paleontology[iii]
- Designed the Nanjing Smart Traffic Platform and lead functionality implementations, including Origin-Destination analysis, city congestion analysis, dynamic traffic zone extraction, short-term congestion prediction, fake vehicle plate number discovery and plate number prediction for incomplete records.
- Analyzed public opinion for Nanjing 12345 hotline by leveraging multi-class classification algorithms: Multilabel K-Nearest Neighbors Algorithm based on label entropy, Euclidean distance and TF-RDF measures, Bayesian classification algorithm with add-on smoothing, Multilabel classification based on Support Vector Machines(SVM)；Event extraction based on dependency parsing and temporal relationship analysis for events based on rules.
- Analyzed clues for key groups with public security concerns：Analysis of event transition possibility based on Floyd-Warshall algorithm and critical paths extraction in graph

Platform development and partner toolkit development for SAP Business ByDesign, SAP Labs   2007.05-2011.03
Algorithm and Application Developer

- Implemented element validation of binding between XML PDF template and data entities.
- Design and implement dynamic bird-view for visualization of graphic relationship among business entities.
- Designed and developed Business Object Description Language (BODL) and Advanced Business Scripting Language (ABSL) based on ANTLR, and integrated those two languages in Eclipse and Visual Studio plugins with SAP Partner Development Infrastructure(PDI) tool.
- Integrated the Visual Studio plugins and the visual editor of User Interface (UI) using .Net AppDomain isolation and across-AppDomain notification

HONOR & CERTIFICATES

- 2003 Microsoft Innovation Cup - SALT, The school team, 12th place of Mainland China, Touronline(virtual tour online)
- 2010 SAP Excellent Employee，2012 SAP High Potential Employee
- 2013 and 2014 Team Coach of Nanjing Innovation Center in SAP Innovation Competition, 1st place of China Lab
- Tianchi CIMKM AnalytiCup 2018, Cross-lingual Short-text Matching of Question Pairs, 26/1027
- Coursera Andrew Ng's Machine Learning Series(with programming assignment)，refer to certificate
- Coursera Andrew Ng's Deep Learning Series (with programming assignment), refer to certificate
- Coursera Daphne Koller's Probabilistic Graph Model 1，2，3(with programming assignment)，refer to certificate
- Coursera Geoffrey Hinton's Neural Networks for Machine Learning, refer to certificate
- Udacity Michael Littman and Charles Isbell's Reinforcement Learning (with programming assignment[iv])
- UC Berkeley CS285 by Sergey Levine，refer to programming assignment

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[i] Regarding details of patent, refer to https://patentcenter.uspto.gov/#!/applications/13934706

[ii] CONOP, sorting algorithm based on adjustment of pairs based on penalty function with non-convex constrained optimization , refer to https://www.paleosoc.org/assets/docs/extended-CONOP-COURSE-NOTES.pdf

[iii] Collaboration with Professor Jinxuan, Fan, refer to news in Chinese Academy of Science

[iv] It's my private GitHub repository. Once needed access, please contact me with email.