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). Deep research on JXME's MIDP protocol and video-sharing framework. 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 (September, 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, US Application NO. 13/934,706 | Patent ID 81495268 | Patent Ref 120542US01, China Application NO. 20130269463.3 | Patent ID 82826027 | Patent Ref 120542CN01
- Automatic category assignment and potential topic discovery for products based on Latent Dirichlet Topic algorithm, SAP Patent Invention ID. 83839165
- Simulator of bundle clicking for validating Bandit strategies in A/B testing, US Application NO. 17/547,637 | Patent ID 83839171 | Patent Ref 210412US01
- Reinforcement Learning Model for product recommendation considering balance between product profit and customer interests, US Application NO. 17/556,238 | Patent ID 83848635 | Patent Ref 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 behaviors' 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 items for customers using Deep Reinforcement Learning Algorithms to reach the balance between gaining product profit for merchant 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[1] based on Simulated Annealing Algorithm used to determine relative time scale of fossil records, and gave a parallelization proposal based on Monte Carlo sampling: a co-innovation project with Nanjing Institute of Geology and Paleontology[2]
- Designed the Nanjing Smart Traffic Platform and led functionality implementations, including Origin-Destination analysis, city congestion analysis, dynamic traffic zone extraction, short-term congestion prediction, fake vehicle plate number discovery and prediction of missing digitals of vehicle plate.
- Analyzed public opinions 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)； extracted critical public security events based on dependency parsing and finished temporal relationship analysis for those events based on key rules.
- Analyzed clues for key groups with public security concerns： reason out event transition possibilities 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 into Eclipse and Visual Studio plugins for SAP Partner Development Infrastructure(PDI) tool.
- Integrated Visual Studio plugins and visual editor of User Interface (UI) by an across-AppDomain communication framework that also guarantee the process security via .Net AppDomain isolation

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[3])
- UC Berkeley CS285 by Sergey Levine， refer to programming assignment

[1] 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

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

[3] It's my private GitHub repository. Once need to access, please contact me with email