JINGYI BU

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SUMMARY

· 6+ years' AI/data science experience in Healthcare, Aviation, and Insurance.
· 3+ years' experience of leading a 10+ AI engineers/data scientists team.
· Production-level AI solution with reinforement learning, deep learning, classic machine learning.
· Co-first author of the book - Machine Learning: the Theory and Optimization behind the Algorithm.
· Welcome to my GitHub and feel free to take whatever you like.

EXPERIENCE

AIA Group Nov 2018 - Present
Artificial Intelligence Lead *Hong Kong*

· Lead AIA's exploration of where, why and how AI (cognitive and non-cognitive) may be applied to improve AIA's customer experience, distribution effectiveness, business processes and operating efficiency, while maintaining regulatory compliance.
· Play a key role in explaining AI concepts to AIA's leadership team, defining specific 'use cases' for potential adoption, and overseeing the integration of those as appropriate into the business to create measurable impact.
· Champion the selective launch and implementation of AI projects across the 18 Asia Pacific markets that make up the AIA Group.
· Propose and define AIA's AI roadmap and priorities, set the direction for future technology investments in the AI field.
· Establish intellectual and commercial leadership for AIA in AI for Insurance.

GE Aviation Digital Jun 2016 - Nov 2018
Data Science Team Lead, Staff Data Scientist *Shanghai, China*

· Establish and lead data science team to explore and apply modern data analysis methods in traditional industries.
· Lead/participate in global projects and build solid connection between local and global data science groups
· Plan, monitor, and review the results of China team's local projects.
· Coach, counsel, and discipline team members; design individual technical/career development plan for each team member.
· Define, formulate, and develop strategies for China team's technical growth.
· Standardize and optimize data analysis process for GE Aviation China to continuously improve efficiency and stability.
· Cooperate and collaborate with business team to develop new customers for GE Aviation China.

Philips Research Healthcare Apr 2013 - Jun 2016
Scientist *Shanghai, China*

· Disease risk modeling including high risk pregnancy identification, cardiovascular disease risk predication etc.
· Healthcare big data analytics.
· Data-driven and knowledge-based clinical decision support.

· Knowledge management.

PROJECT

Next-generation AI underwriting solution to replace and surpass legacy rule-based underwriting engine for Philam
AIA, Dec 2018 - Present

· Designed AI solution to fully replace existing rule-based underwriting process.
· Led data science team in building models on different categories of mannually processed cases including free text, claim history, etc. for increasing straight through processing rate.
· Proposed simulation method to translate rules into AI models without any historical data for new product release and existing rule updates.
· Built online envolving loop to continuously increase STP rate.
· Proved technical feasibility by a four-week POC.
· Leading 3rd-part vendors to design the software architecture and to implement the new system. (ongoing)

Agent development boosting solution for AIA China
AIA, Nov 2018 - Present

· Agent retention prediction modelling based on performance and behaviour tracking.
· Led data science team in building both classic machine learning models with handcrafted feature engineering and deep learning models on raw multivariate time series data e.g. weekly performance or behaviour tracking records.
· Interpreted and explained the model results to AIA China leadership team with business values.
· Worked closely with local IT team to integrate the models into AIA China's legacy workflow.
· Developing agent performance forecasting models and high potential agent identification models to enhance and complete the whole agent solution. (ongoing)
· Helped AIA China build up AI capability and establish data science team by defining the roles and responsibilities, referring talents, and interviewing candidates.
· Built the relationships and trust with AIA China for AIA Group.

New AI underwriting engine to replace Magnum and increase STP for AIA Hong Kong
AIA, Jan 2019 - Present

· Completed a four-week POC that proved data-driven models can replace Magnum with an acceptable accuracy.
· Led data science team in building models on free texts, claim history, medical reports, and additional questionnaires to increase the STP.
· Collaborating with HK IT team on integrating the models with existing systems. (ongoing)
· Setting up a pilot to test the performance of the new AI underwriting engine after going live. (ongoing)

Predictive system maintenance for AIA China
AIA, Mar 2019 - Present

· Identify error producing nodes of AIA China's IT systems and predict issue resolve time for newly raised incidents by modelling on free text contained system log files.
· Plan and organize a Heckfest with Microsoft Azure team to have a quick result.
· Evaluate the suitability and applicability of Azure for AIA.

Airline Inventory Management with Reinforcement Learning
GE, Sep 2017 - Nov 2018

· Designed and developed a gym-like environment to emulate the real world scenario.
· Proposed and implemented multiple AI solutions including heuristic search, DQN, PPO.
· Developed a distributed TensorFlow framework to train the model.

Engine Health Monitoring and Management
GE, Jun 2016 - Nov 2018

· Forecasting model: LSTM Accepter/Transducer architecture + residual analysis.
· Classification model: multi-channel CNN + resampling strategy.
· Embeding model: LSTM encoder-decoder architecture + classic machine learning models.
· Generative model: GAN + data augmentation.
· Application scenarios: high risk aircraft engine identification; aircraft oil leakage detection and prediction; airline fleet segregation et al.

Analytics Based (Aircraft Engine) Maintenance
GE, Jun 2016 - Jan 2017

· Built regression models (LR, CART, GBDT) for component-level distress ranking prediction.
· Developed stacking models to ensemble multiple component-level regression models for engine-level removal prediction.
· Lead the development of automative analytics tools for this kind of problem for global teams.
· Facilitated GE Aviation Analytics' transition from R to Python.

Cloud Based Patient Follow-up and Rehab Management Solutions
Philips, Aug 2015 - Jun 2016

· Developed user classification models to detect potential paying customers or the users who can benefit from the solution.
· Designed and developed the knowledge base enabling the functionality of clinical decision support of the system.

Mobile Obstetrical Monitoring
Philips, Jun 2014 - Jul 2015

· Developed risk predication models (LR and CART) for pregnant woman on hypertension in pregnancy and pre-eclampsia
· Designed and implemented a random patient profile generator for physicians to validate the models.
· Developed an Android prototype to implentent and test the models

Personal Health Management Solution
Philips, Jan 2014 - Dec 2014

· Designed the whole workflow of personal health management.
· Developed risk predication models (Weibull) on four-year hypertension, eight-year diabetes, and ten-year cardiovascular diseases.
· Developed recommendation delivering systems including diet and exercise according to people's risk levels.

Intelligent Test Suite
Philips, Apr 2013 - Dec 2013

· Rebuild disease risk models from literature study.
· Design and implement knowledge base to deliver personalized recommendations.

EDUCATION

Shanghai Jiao Tong University *2010 - 2013*
M.S. in Biomedical & Medical Engineering
Overall GPA: 2.61/3.0 — top 10%

Shanghai Jiao Tong University *2006 - 2010*
B.S. in Biomedical & Medical Engineering
Overall GPA: 3.7/4.3 — top 10%

PUBLICATIONS & PATENTS

· **Jingyi Bu**, Chunqi Shi. Machine Learning: the Theory and Optimization behind the Algorithm. This book will be published in 2019.

· **Jingyi Bu**, Hao Li, Hai-Qing Gong, Pei-Ji Liang, Pu-Ming Zhang. Gap Junction Permeability Modulated by Dopamine Exerts Effects on Spatial and Temporal Correlation of Retinal Ganglion Cells' Firing Activities. in Journal of Computational Neuroscience, 2013.

· **Jingyi Bu**, Ning Lan. An Improved Multi-Channel Cortical Recording and Stimulation System. International Convention on Rehabilitation Engineering & Assistive Technology, p. 98-101, 2010.

· Wang Jin and **Bu Jingyi**. An Apparatus and Method for Evaluating Multichannel ECG Signals. WO2015052609A1.16/04/2015