XIUGE CHEN

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PROFESSIONAL PROFILE

All skills listed below are ranked by proficiency from high to low.

Languages: C/C++, Java/Groovy/Kotlin, Python, Haskell, Prolog, R.
Data storage: MySQL, OracleSQL, JSON, XML.
Frameworks: Sprint Boot, Maven, Android Studio.
Operating systems: Linux/Unix, Windows, Android/IOS.
Other tools: Git, Agile/Scrum, Bamboo, gtest/JUnit, CMake, Docker, JIRA, Confluence, SVN, Jenkins.

ACADEMIC QUALIFICATIONS

Master of Science (Computer Science) - University of Melbourne, Australia **2018.07 - NOW**

- GPA: 7.00/7.00 or H1 or 90/100

Bachelor of Science (Biological Science) - Nanjing University, China **2014.09 - 2018.06**

- Minor in Finance
- GPA: 4.52/5.00 or 3.81/4.00 or 90/100 • Rank: top 10%
- Awards: People's Scholarship (2014-2017, 10%), Outstanding Graduate (10%)
- Activities: Leadership Club (Vice President), Student Union (Minister), School Basketball Team

WORK EXPERIENCE

Research Assistant (300 hours) - ***University of Melbourne, Australia*** **2020.07 - NOW**

Supervisor: Dr. Tilman Dingler

- Research project: *Detecting Cognitive Biases with Biophysical Sensors to Battle Misinformation* (see below)

Tutor / Demonstrator - University of Melbourne, Australia **2019.02 - NOW**

Subject: Database Systems (INFO20003) Supervisor: Dr. Renata Borovica-Gajic, Dr. Farah Khan

Subject: Computer Systems (COMP30023) Supervisor: Dr. Lachlan Andrew

- Conduct high-quality tutorials/workshops, consultation and assessment marking, average rate: 4.9/5.0.

Software Engineer Intern - Optiver, Australia **2019.11 - 2020.02**

- Develop C++ IDL system that periodically downloads instruments data from public API and register into existing database as secondary validation resources.
- Replace old information transmission protocol LiteInfo in existing C++ system with new Cap'N protocol IMLP.
- Add unit test using gtest and gmock for above systems.
- Develop D1 autotrader in both Python and C++, win first place in the stress test of internal competition.

Software Engineer Intern (360 hours) - Huawei Technologies Co., China **2018.12 - 2019.01**

- Using Groovy, SQL, Sprint Boot and Maven to develop new efficient remuneration calculation model for the BOSS of China Mobile, including using new data representation, caching and multithreading.
- Extend existing functionalities, such as changing system logic and improving database security with AES encryption/decryption algorithm.
- Add unit test using JUnit for above system.

RESEARCH EXPERIENCE

Theoretical Computer Science Group, CIS, University of Melbourne, Australia **2020.03 - NOW**

Approximately Estimate Graph Quantities in Poly-log Space under Streaming Models (In Progress)

Supervisor: Professor Tony Wirth Collaborate with Dr Rajesh Chitnis (University of Birmingham)

Goal: For different graph classes, identify which graph quantities can be approximately estimated under streaming models and using only poly-logarithm space.

- Design corresponding data structures and algorithms, prove their correctness and tightness.

Human-Computer Interaction Group, CIS, University of Melbourne, Australia **2018.10 - NOW**

Detecting Cognitive Biases with Biophysical Sensors to Battle Misinformation (In Progress)

Supervisor: Dr Tilman Dingler

Goal: Detect the presence of confirmation bias and cognitive dissonance in users during news consumption.

- Refine existing chatbots, experiment with different conversational designs.
- Develop lab application to collect biophysical responses (e.g. gaze, infrared) from participants.
- Train machine-learning models to detect the presence of confirmation biases and cognitive dissonance.

Effect of Reading Interface on Reading Behavior (In Progress) Supervisor: Dr Tilman Dingler

Collaborate with Adobe Research (Documents Intelligence Lab)

Goal: Using existing mobile sensors to quantify individual's reading behavior (deep v.s. shallow) on different reading interfaces (news v.s. social media).

- Develop Android/IOS reading application that collects user interaction data (e.g. scrolling, gaze).
- Train machine-learning models to evaluate user reading behavior.

Using Ubiquitous Sensing to Detect Episodes of Hand-washing (Finished)

Supervisor: Professor Vassilis Kostakos

Goal: Accurately quantify hand-washing quality using wearable sensors.

- Develop C++ system to collect IMU and EMG data from MYO armbands.
- Train machine-learning models to accurately classify different steps of hand-washing.

Other Projects

Methylation Modification and Gene Expression in Tumor Cells Supervisor: Professor Jing Wang

Summary: Statistically analysis the correlation between promoter methylation and gene expression.

Mmdecoder Supervisor: Professor Ian Korf

Summary: Develop a simple HMM to annotate the genetic origins of a mouse strain.

PUBLICATION

- Wang, C., Sarsenbayeva, Z., Chen, X., Dingler, T., Goncalves, J. and Kostakos, V., 2020. Accurate Measurement of Handwash Quality Using Sensor Armbands: Instrument Validation Study. *JMIR mHealth and uHealth*, *8*(3), p.e17001.

ADDITIONAL INFORMATION

- **School/Personal Projects**:

  Python/Machine Learning: Tweets geolocation and authorship recognition; Various multi-armed bandit.

  Java: Distributed shared graphic application; Advanced/Streaming data structures and algorithms;

  C: Password cracker; 15-puzzle solver; Simplified web server.

- **Languages**: Chinese (Native), English (Fluent, TOEFL: 109/120, GRE: 170+155)