Sidong Feng

Office 112, Building 2   Email : u6063820@anu.edu.au
AI Center   Mobile : +86 189 13149200
NUS (Suzhou) Research Institute   HomePage: sidongfeng.github.io

EDUCATION

- **Monash University**   Melbourne, AU
  Preparatory Philosophy of Doctor; Full Scholarship

- **Australian National University**   Canberra, AU
  Bachelor of Software Engineering (Honors) ; top 5%   *Feb. 2016 – Dec. 2019*

- **Blue Mountains Grammar School**   NSW, AU
  High School; top 1% ; Half Scholarship   *Jul. 2013 – Nov. 2015*

PROJECTS

- **Automated Object Recognition of Algae for Measuring Water Quality**
  Professor Yin Xu (National of Singapore University)   *May 2020 - June 2020*
  - **Scene Understanding**: Detect water environment of key lakes and rivers using UAV, Process real-time video stream, Give real-time alarm to the identified algae, Make intelligent judgment, and Assist in salvage
  - **Recognition algorithm**: Propose image semantic segmentation algorithm DeepLab V3+ to segment the algae region and identify its concentration
  - **Information Integration**: Calculate UAV trajectory by using the acceleration recorded by accelerometer, the coordinate axis, and the attitude data of the UAV
  - **Backend Processing and Information Visualization**: Stitch the real-time water image from UAV video stream, and Calculate and visualize the area of algae by pixel mapping

- **Stack Overflow Anchor Text Recommendation**
  Prof Zhenchang Xing (Australian National University), Dr Chunyang Chen (Monash University)   *Oct 2019 - Current*
  - **Data analysis**: Explore potential beneficial effects on anchor text changes in collaborative editing.
  - **Deep Learning**: Purpose BERT model trained with custom dataset to automatically extract and classify anchor.

- **A Hybrid Tool for GUI Element Detection**
  Prof Zhenchang Xing (Australian National University), Dr Chunyang Chen (Monash University) *Feb 2020 - June 2020*
  - **Investigate GUI elements detection**: Critical for many GUI automation and GUI testing tasks
  - **Implement State-of-the-art detection approaches**: Two old-fashioned computer vision methods, Three deep learning based methods, and Our GUI-specific detection method to acquire elements from GUI
  - **UIED (http://uied.online)**: An interactive web application allows user to manage GUI elements easily and produces reusable detection results for further development

- **Discover Missing UI Design Semantics through Recovering Missing Tags**
  Prof Zhenchang Xing (Australian National University), Dr Chunyang Chen (Monash University) *July 2019 - Feb 2020*
  - **Investigate Collaborative Tagging Problems of Design Sharing Site**: Incoherent tag usage and Missing tags for uploaded GUI hinder poor GUI retrieval
  - **Propose Association Rule Mining and Community Detection**: Construct a vocabulary for UI design semantics based on the tags for the large-scale UI design from Dribbble
  - **Develop a Customized Deep-Learning based method**: Specifically recommending missing semantic tags to the existing GUI by leveraging both visual and textual information according to the GUI design characteristics
  - **Github (https://github.com/UITagPrediction/CSCW2020)**: We released the source code, experiment results, and tag categorization to the public for further extension

- **Design Search & Knowledge Discovery through GUI Component Gallery**
  Prof Zhenchang Xing (Australian National University), Dr Chunyang Chen (Monash University) *Nov 2018 - Nov 2019*
  - **Identify Fundamental Limitations of Existing Design Sharing Platforms**: Practical use of certain GUI designs in real applications, Detailed design of the GUI components, Advanced GUI design search abilities
  - **Develop reverse-engineering and Computer-Vision based Techniques**: Automatically transform half a million GUI screenshots of over 130,000 Android applications into a large-scale GUI component design gallery

- - **Enables Invisible Crowdsourcing of GUI Design Resources**: Support novel ways for designers to collect, analyze, search, summarize and compare GUI designs on a massive scale
  - **Gallery D.C. (http://mui-collection.herokuapp.com)**: The quality of our website has been praised by designers of several big companies, including Google, Facebook, Huawei

- **Dynamic Facial Stress Recognition in Temporal Convolutional Network**
  Professor Tom Gedeon (Australian National University)   *Feb 2019 - Jul 2019*
  - **Deep Learning**: Convolutional based model to automatically recognize temporal dynamic facial stress problem.
  - **Outlier Removal**: Feasibility of Bimodal Distribution Removal on added artificial outlier and real world noise.
  - **Previous Work Analysis**: Fundamental limitations of static processing characteristics of stress recognition.

- **Implementing Mathematical Functions in a Unum Library**
  Dr Josh Milthorpe (Australian National University)   *Feb 2018 - Jun 2018*
  - **Mathematical Implementation**: Feasibility of mathematical inductions on Log, Exp and Power in Unum.
  - **High Performance Analysis**: Estimating Accuracy, Time and Precision to analyse function efficiency.

Experience

- **NUS (Suzhou) Research Institute**   Jiangsu, CN
  Engineer Intern   *Apr 2020 - Present*
  - **Text Detection**: Recognize text and position as the basis of index segmentation and topic classification.
  - **Error Detection**: Propose object detection model to identify and locate the correction of the wrong question.
  - **Hand Written Removal**: Support student to further redo the exam and improve review efficiency.
  - **App Design and Development**: Develop a high cross platform and responsive application by using uni-app.

- **Leju (Suzhou)**   Jiangsu, CN
  UI Developer Intern   *Nov 2018 - Feb 2019*
  - **Interface Design**: Designed the product application, guidelines and UI specification.
  - **Human-Computer Interaction**: Repeatedly elicited users' feedback about experiences with prototyped design.
  - **Bug Testing**: Profiled, troubleshot and fixed bugs for the high-volume internal web application.
  - **System Improvement**: Improved code readability and performance by reviewing the quality of code.

- **Civilise.ai**   Canberra, AU
  Software Developer Intern   *Jul 2018 - Nov 2018*
  - **Data Preprocessing**: Developed CV modules to detect regions of change in satellite images at different time.
  - **Deep Learning**: Built a convolutional neural network to classify regions of change, and achieves 92% accuracy.
  - **Data Visualization**: Performed GIS operations on heatmap to cluster high concentration of property revolution.
  - **Software Documentation**: Constructed concise burndown chart, user story map, risk register and decision log.

- **OK RDY**   Canberra, AU
  Software Developer Intern   *Feb 2018 - Jul 2018*
  - **Mobile Application**: Designed interface and implemented functionalities (malicious reporting, message system)
  - **Bugs Testing**: Applied Jira for bug tracking, led team to fix bugs through unit test in mentor-matching app.

- **China Life (Suzhou)**   Jiangsu, CN
  Software Developer Intern   *Nov 2017 - Feb 2018*
  - **Software Management**: Responsible for debugging and repairing coding issues for application.
  - **Cross-browser Compatibility**: Re-factored functionalities and CSS for websites to ensure compatibility.

- **Building and Construction Council (Suzhou)**   Jiangsu, CN
  Civil Analyst Intern   *Nov 2016 - Feb 2017*
  - **Building Coordination**: Assisted miscellaneous projects as assigned to insure a successful boutique opening.
  - **Progress Report**: Provided status reports to senior management to keep them apprised of progress.

PUBLICATIONS

- One double-blind paper is *In the process of submitting to* [**CSCW 2020 (Core A) under review**].

- Two papers are *In the process of submitting to.* [**FSE Demos 2020 (Core A) under review**].

- **S. Feng**. "Dynamic Facial Stress Recognition in Temporal Convolutional Network", Proceedings of the Springer on Neural Information Processing, vol 1142, ICONIP, December 2019, pp. 698-706 [**ICONIP 2019 (Core A)**]. This paper is also published in ANU Bio-inspired Computing conference [**ABCs 2019**].

- C. Chen, **S. Feng**, Z. Xing, L. Liu, S. Zhao, J. Wang. "Gallery D.C.: Design Search and Knowledge Discovery through Auto-created GUI Component Gallery", Proceedings of the ACM on Human-Computer Interaction, Volume. 3, No. CSCW, November 2019, pp. 180:1-180:22 [**CSCW 2019 (Core A)**].

AWARDS

- Top solution in AI project of Smart City in Suzhou park (obtained $12,0000 project investment). [at NUSRI]
- High Distinction in Algorithms, Mathematics, Database Analysis, Software Computing, etc. [at ANU]
- Top 5 Award in Innovation ACT 2018 (with $8,750 grant). [in Civilise.ai]
- Reached a primary intent of cooperation with the Queanbeyan council, NSW, Australia. [in Civilise.ai]
- 'Start-up of the Year' award in the Digital Canberra iAwards 2018. [in OK RDY]
- Top student in Mathematic Extension 1&2, English as Second Language and Information processes and technology [at BMGS].
- Top 20% in Australian CommonWealth Mathematics Competition.

PROGRAMMING SKILLS

- **Languages**: Python, Java, Javascript, SQL, HTML, C, Haskell   **Technologies**: Photoshop, Uni-app, Sketch

PERSONAL

- Paper Art Design, Certified Skydiver, SSI Water Diver, Amateur Go rank 2 dan