SYLVIA CHEN

PhD, Computer Science at The University of Newcastle

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Fields of Research include:

- **Complex systems modelling** - Modelling complex systems, with developing, implementing and evaluating mathematical models to simulate trade-offs problems (involved mathematical formulation, solution, interpretation and validation) for various fields.
- **Operations Research (OR)** - Conducting mathematical analytics and computational approaches, such as identifying business challenges, modeling complex systems and developing robust solutions, to help in the analysis of decision-making problems and efficient problem solving.
- **Machine learning** – Improving the quality of forecasting and decision-making algorithms with the help of machine learning techniques.
- **AI** - Automatic Synthesis of Programs that design, implement and evaluate Heuristic and Meta-Heuristic Algorithms.

Education

PhD of Computer Science, **waiting for graduation**

Full Scholarship (Tuition Fees and Living Allowance)

School of Information and Physical Sciences, The University of Newcastle, Australia.

Master of Engineering (Cloud Computing and Operations Research), Aug. 2011 – Mar. 2014

Full Scholarship (Tuition Fees and Living Allowance)

School of Automation, Beijing University of Posts and Telecommunications, China

Bachelor of Management, Sep. 2006 – Jul. 2010

China National Scholarship

School of Management, Wuhan University of Technology, China

Chronological employment history

University of Newcastle, Australia

Research Assistant in School of Electrical Engineering and Computing (SEEC)   06/2017 – 12/2017

• Analyzed the permutation characteristics of array using statistical and machine learning algorithms, such as feature selection.

• Performed different storing algorithms to identify and determine the efficiency of data sorting.

University of Newcastle, Australia

Teaching (Casual Academic) in SEEC   01/2017 – 12/2017

Course 1: Computing Fundamentals (COMP1010)

• Tutored and demonstrated workshops in hardware and software system and project management.

• Collaborated with lecturers to develop course outlet, course slides and examination materials.

• Helped students to gain insight into object‑oriented life cycle model, as well as effectively utilize project management techniques and tools.

- Assignments and exam marking.

Course 2: Introduction to Information Systems (INFO1010)

- Delivered tutorials in computer and information systems
- Helped students be proficient in the use of computer-based technologies as personal productivity tools.
- Helped the students in being familiar with data management and analysis tools for decision-making.
- Assignments and exam marking.

SAMSUNG Electronics

E-commercial Data Analyst   05/2014 – 01/2015

- Data Processing & Analysis: NumPy and Pandas
- Data Visualization: Matplotlib
- Monitored, analyzed, and evaluated online biz. trends and consumer behaviors to identify online biz. opportunities.
- Provided online business reports analysis/synthesis to support E-commerce sales forecasting and budgeting, as well as develop additional analysis tools and processes.
- Monitored and produced weekly and monthly sales reports, and assisted with portfolio analysis to identify optimal product groups.
- Prepared, updated, and circulated all required sales business reports and communication materials, provided ad-hoc analyses.

LENOVO

Manufacturing Procurement Cost Analyst   04/2013 – 10/2013

- Checked VMI (Vendor Managed Inventory), accounted for costs caused by quarterly price change of AIO parts materials and assisted in DN/CN payments.
- Conducted inventory data cleaning and analysis and assisted with financial analysis and reports.
- Provided interpretation of variances from budgets and standards as well as advises to senior leaders.
- Provided financial assessments and information to senior management to support planning and budgeting activities.

Beijing University of Posts and Telecommunications, China

Research Assistant - Project: Analysis of cloud computing business services models   09/2011 – 03/2014
with supply chain contract (**Natural Science Foundation Projects**)

- Formulated mathematical models with different supply chain contracts in cloud computing context.
- Developed optimization algorithms with Matlab to improve the profits of supply chain members.
- Simulated operational performance with Vensim to analyze its long-term development viability.

Recent Publications

[1] Chen, G., Tang, W., Chen, S., Wang, S., & Cui, H. (2022). Prediction of self-healing of engineered cementitious composite using machine learning approaches. *Applied Sciences*, *12*(7), 3605.

[2] Chen, S., Berretta, R., Mendes, A., & Clark, A. (2021). Integrating shelf life constraints in capacitated lot sizing and scheduling for perishable products. In Data and Decision Sciences in Action 2 (pp. 33-

46). Springer, Cham.

[3] Chen, S., Berretta, R., Clark, A., & Moscato, P. (2019). Lot sizing and scheduling for perishable food products: A review.

Skills & Interests

[1] Programming – Python, C, HTML, SQL, Matlab, Latex

[2] Source code repositories (Git) and work item tracking tools (e.g., JIRA/TFS)

[3] Certificate: National Computer Rank Examination (NCRE) - C; NCRE-database

[4] Math - Solid skills in formulating mathematical models.

[5] High performance data analytics (HPDA) experience - uses high performance computing (HPC) combined with data analytics to discover patterns and insights.

Honors & Awards

[1] I was invited to EWI 2018 – sponsored by **European Operational Research Societies (EURO) Winter Institute on Lot Sizing and Related Topics**, held at the European University Viadrina, Frankfurt(Oder), Germany, March 5 -16, 2018. (The only invitee from Australia)

[2] I was invited to 26th ASOR National Conference for the Australian Society of Operations Research and Defence Operations Research Symposium (ASOR/DORS) 2018. (Runner-up for best paper and presentation)

[3] Excellence Award at the 16TH CHUNHUI CUP, Global Student Innovation And Entrepreneurship Competition - the most prestigious and influential entrepreneurial competition in China, I won the Excellence Award at the 16TH CHUNHUI CUP, Global Student Innovation And Entrepreneurship Competition, (jointly organized by the Ministry of Education of the People's Republic of China and the Ministry of Science and Technology of the People's Republic of China, 2021.) Check for more details.

[4] 2014 Samsung China Outstanding Newcomer Award

[5] 2011-2012 First-class Scholarship in BUPT

[6] 2012 Second price in the goodwill ambassador match

[7] 2011-2013 Full scholarship

[8] The CILT (UK) Level 5 Professional Diploma in Logistics and Transport

Referees

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