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| WEBER **LIU** | +61 468 678 002  [wliu1996@hotmail.com.au](mailto:wliu1996@hotmail.com.au)  <https://ouibaa.github.io> |

**Education**

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| 2022 – Current | **Graduate Certificate in Education Studies (Higher Education)**  *University of Sydney*   * Completed courses: University Teaching and Learning, Reflection and Practice in university Teaching and Learning, University Teaching Porfolios, Developing integrated eLearning environments |
| 2018 – 2021 | **Doctor of Medicine**  *University of Sydney*   * Achieved High Distinction average in pre-clinical years and distinctions in Medicine (2020), Community Health (2020), Perinatal and Women’s health (2020), and MD Research (2021).   Awards   * Deans list of Academic Excellence * Vice Chancellor’s Scholarship |
| 2019 – 2021 | **Master of Science in Medicine (Clinical Epidemiology)**  *University of Sydney*   * Achieved overall high distinction average, with high distinctions in Clinical Epidemiology (2019), Systematic Reviews (2019), Writing and Reviewing medical papers (2020), Advanced Statistical Modelling (2021) and distinctions in Advanced Epidemiology (2019) and Biostatistical Modelling (2020). |
| 2015 – 2017 | **Bachelor of Science (Advanced)**  *University of Sydney*   * Achieved overall high distinction average, undertaking research projects with NSW Brain Bank, Westmead Children’s Hospital and presentations under the Dalyell Scholars program (previously TSP).   Awards   * Deans List of Academic Excellence * Vice Chancellor’s Scholarship * Sydney Medical School Summer Research Scholarship |
| 2009 – 2014 | **Higher School Certificate**  *Sydney Boys High School*  Awards   * 99.95 ATAR, 19th in the NSW (Chemistry), Australian Student’s Prize, Premier’s All Rounders Award * Lennie Basser Award for Scientific initiative for co-development and management of peer mentoring program |

**Skills**

* Programming: Java, C#, Python, MATLAB, R/R-Studio with knowledge of querying REST API frameworks
* Front-end development in HTML/CSS/JS with competency in frameworks such as ReactJS
* Unity3D Development – Certification ID: 201708UCD2659, Blender3D
* qGIS and familiarity with open source mapping software and APIs

**Professional work experience**

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| March 2022 – Current | **Research Assistant**  *Health Economics division, The George Institute, University of New South Wales*   * Worked on the economic interpretation of REDUCCTION study and application of statistical models in stepped wedge trial designs |
| January 2022 – Current | **Junior Medical Office**  *NSW Health (Central Coast Local Health District)*   * Intern in Neurology, Orthogeriatrics, Acute geriatrics |
| October 2021 – December 2021 | **Assistant in Medicine**  *NSW Health (Western Sydney Local Health District)*   * Westmead Hospital Emergency Department * Vaccination Worker and clinical support roles in Qudos Bank Arena mass vaccination hub |
| July 2017 – Current | **Demonstrator, tutor and curriculum developer**  *University of Sydney, SoMS/SoLES*  **Introduction to Clinical Epidemiology (CEPI5100)**   * Assignment marking and feedback for the Introduction to Clinical Epidemiology unit of study in the Masters of Medicine, Masters of Public Health and Masters of Science (Clinical Epidemiology) units   **Research Methods for Honours (SOMS4101**)   * Biostatistics tutorial on data visualisation and Kaplan-Meier curves/survival analysis and development of Google Colab notebooks for data analysis and visualisation in Python and R   **Doctor of Medicine**   * Presentation of Arduino-based workshop demonstrating Muscle-contraction and feedback loops using programmable LEDs and muscle activity detection   **Medical Science Interdisciplinary Project (MEDS3888)**   * Consulted and assisted with conceptualisation and development of student-led Unity-based edugames, with focus on asset generation and sourcing relevant MOOC resources.   **From Molecules to Ecosystems (BIOL1X01)**   * Co-created tutorial series involving protein visualisation in Virtual Reality (Blender 3D, ePMV, Unity and Oculus) and analysed student unit feedback * Redesigned tutorial series based on prior feedback and survey analysis, taught game design principles   **Human Biology (BIOL1X07/MEDS1X01)**   * Developed and coordinated a tutorial series on science communication (Adobe Slack) and data visualisation and java programming (Processing) to over 200 students involving live programming workshops * Ran a weekly ‘Ask Weber’ tutorial series to support students in understanding concurrent lectures and concepts in human biology via Zoom (throughout 2020-2021 lockdown) - <https://ouibaa.github.io/pages/educational_resources/ask_weber> * Attended multidisciplinary curriculum development meetings with Educational designers and researchers (including Professor Peter Reimann, Dr. Babak Sarrafpour and Professor Philip Poronnik, Dr Melissa Cameron, Peter Goodyear, Dwayne Ripley) to optimise workshop structure and learning for the new curriculum * Developed Github Pages and Materalize-based anatomy web-page as a supplementary online guide for students - <https://meds1x01.github.io/anatomy/> * Deployed and consulted on a Unity-based VR workshop involving development of museum artefacts and a virtual time capsule (COVID-19 era) in VR   **Key concepts in Physiology (PHSI2X07/MEDS2X01)**   * Developed and delivered a 4-day Arduino maker workshop to both medical science and medical (MD) students   **Frontiers in Whole Body Physiology (PHSI3X11)**   * Project lead in ‘Vessel Run’ - Virtual Reality game development (Blender 3D, Unity, C#), coordinating 16+ students in experiment planning and development and data collection and analysis (Zephyr activity tracker) |

**Research and volunteer experiences**

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| August 2022 - Current | **Honorary Research Affiliate**  *School of Health and Wellbeing, University of Glasgow*   * Research associate working on the UK Biobank dataset in capacity of research affiliate at the Westmead Applied Research Centre |
| May 2022 - current | **Teaching Affiliate**  *School of Medicine and Public Health, University of Newcastle*  **Joint Medical Program PBL leader**   * Lead PBLs during medical rotations for Medical Students in the Joint Medical Program   **MPH Tutor – EDIP Infectious Diseases Surveillance**   * Involved in resource development and integration of course into Canvas in 2022 for Masters of Public Health unit |
| January 2021 - current | **Founding member and digital educational technologies lead**  *FMH Media Lab, University of Sydney*  **Histopathology slide viewer platform (Etaki)**   * Developed a proof of concept histology application using OpenSeaDragon framework on an AWS S3 bucket and convinced key stakeholders in Histology (A/Prof Suzanne Ollerenshaw), Physiology (Prof Philip Poronnik), Dentistry (Dr. Babak Sarrafpour) and Pathology to support integration into university ICT services. * This project was originally conceived to improve educational experiences of medical and medical science students in histology and minimise reliance of physical slides prior to COVID-19 lockdown. * This project has since been funded internally and has been handed over to the ICT TechLab which has formed the premise of the Etaki platform.   **MD Research project coordinator**   * Development and consultation of MD projects in the new MD cohort   **MD Elective Project coordinator (2020 – 2021)**   * Conceived and coordinated an MD elective project regarding development of a Virtual OSCE patient with the goal of aiding medical education, using the Google DialogFlow API   **MPhil project support**   * Provided guidance and expertise regarding VR/Unity application development and data analysis for MPhil projects in SoMS |
| December 2021 – current | **Research Intern**  *National Health and Medical Research Council Clinical Trials Centre*  **Project**: Scoping review of data sharing guidelines for use in Independent Participant Data (IPD) meta-analysis  **Supervisor**: Professor Angela Webster, Dr Lene Siedler, Dr Aidan Tan |
| December 2019 – current | **Graduate Research Affiliate**  *Westmead Applied Research Centre (WARC), University of Sydney*  **Project**: Machine-learning versus traditional approaches for cardiovascular risk prognostication in primary prevention cohorts: A systematic review and meta-analysis  **Supervisor**: Professor Clara Chow  **Project**: Differences in initial blood pressure management options based on age differences in newly diagnosed hypertension using NPS MedicineWise  **Supervisor**: Dr Tu Nguyen, Professor Clara Chow  **Project:** Analysis and comparison of predictive risk models in predicting Contrast Induced Nephropathy in an elderly Vietnamese population  **Supervisor:** Dr Tu Nguyen |
| March 2021 – current | **Evaluation Network Member**  *Therapeutic Guidelines Australia* |
| January 2021 – March 2021 | **Research Student**  *Discipline of Biomedical Informatics and Digital Health (BIDH), University of Sydney*  **Project**: Development of an automated pharmaceutical adverse event signal detection algorithm using structured clinical data  **Supervisor**: A/Professor Adam Dunn |
| 2018 - 2020 | **Research Student (MD Project)**  *Westmead Institute for Medical Research, University of Sydney*  **Project**: Development of hospital catchment area maps in qGIS for HTD and PNT hospitals in HCMC, Vietnam  **Supervisor**: Dr. Justin Beardsley  **Project link**: <https://ouibaa.github.io/pages/projects/VNMcatchmentarea/> |
| February 2020 | **Peer Teacher Training Program**  *University of Sydney*   * Completed PTT training program under Prof Annette Burgess |
| November 2018 – February 2019 | **Research Student**  *ACRF Image-X Institute, University of Sydney*  **Project**: Investigating the efficienct of PCA methods in markerless tumour tracking for for real-time radiotherapeutic treatment of lung cancer  **Supervisor**: Dr. Andy Shieh  **Skills**: Worked with 4D cone-beam CT DICOM datasets in MATLAB and Slicer3D |
| May 2017 – July 2018 | **Volunteer Project manager and lead developer**  *ICT TechLab, University of Sydney*  **Ramus Media/VIVID Sydney: Many hands make light work**   * Managed the full-stack development of Vivid Sydney installation utilising a HTML/CSS/JS frontend and MongoDB/flask backend server   **Vice Chancellor’s Recognition Reception**   * Developed a Virtual Reality application for demonstration at the University of Sydney Vice Chancellor’s Recognition Reception to over 100 USYD alumni * Development of a Unity-based VR (Oculus) demonstration with 360 video and student-produced landscapes   **TEDx Sydney 2018**   * Deployed VR showcase of student-generated scenes on behalf of the University of Sydney in the underground activities area of TEDx Sydney 2018.   **Dalyell project mentor**  **Project**: Visualisation of carotid artery in multiplayer VR  **Supervisors**: Weber Liu, Jim Cook, Prof Philip Poronnik, A/Prof Kevin Keay (Anatomy)  **Project**: Development of an Augmented Reality textbook and patient resources  **Supervisors**: Weber Liu, Jim Cook, Prof Philip Poronnik, Prof Peter Thorn (Physiology)  **Skills**: Managed 10+ first-year students and taught 3D modelling and Virtual Reality (Oculus) and Augmented Reality (Vuforia) |
| 2015 - 2017 | **Research Student (University of Sydney TSP projects)**  *Westmead Sydney Children’s Hospital, ICT TechLab, University of Sydney*  **Project**: Visualisation of Congenital heart defects in Virtual Reality for patient and medical education  **Supervisors**: Professor Philip Poronnik, Professor David Winlaw, Dr. Tegan Cheng  *NSW Brain Bank, Department of Physiology, University of Sydney*  **Project**: Investigating the role of the ubiquitin-proteasome system in Alzheimer’s disease  **Supervisors**: Professor Jillian Kril, Professor Philip Poronnik  *Electrophysiology Laboratory, Discipline of Physiology, University of Sydney*  **Project**: Investigating the extent of muscular cellular regeneration in mice models of Myasthenia Gravis  **Supervisor**: A/Prof William Phillips  *Behaviour and Genetics of Social Insects Lab, SoLES, University of Sydney*  **Project**: Exploring the optimal path-finding knowledge of yellow slime mold  **Supervisor**: Professor Madeleine Beekman |
| 2016, 2017 | **Fred Hollows Foundation Charity Lectures**   * Presented HSC Chemistry crash course lectures, with profits donated to Fred Hollows Foundation |

**Conference and meeting attendances**

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| 2019 | Artificial Intelligence in Medicine Surgery and Healthcare (AMSAH) |
| 2018 | Biosciences Education Australia Network meeting |
| 2017 | Unite Melbourne (Unity3D meeting)  Biosciences Education Australia Network meeting |
| 2016 | Hunter Cell Biology meeting |

**Publications, Posters and Presentations**

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| (In submission) | Machine-learning versus traditional approaches for cardiovascular risk prognostication in primary prevention cohorts: A systematic review and meta-analysis  **W. Liu**, L Laranjo, H. Klimis, J. Chiang, J. Yue, S. Marschner, J. Quiroz, L. Jorm, C. Chow |
| September 2022 | Prevalence and Characteristics of Data Sharing Policies Across the Health Research Life Cycle: Funders, Ethics Committees, Trial Registries, Journals, and Data Repositories  A. Tan, S. Libesman, **W. Liu**, Z. Yang, R. Chang, A. Webster, A. Seidler  Ninth International Congress on Peer Review and Scientific Publication |
| May 2022 | Early routine (erCT) versus selective computed tomography (sCT) for acute abdominal pain: a systematic review and meta-analysis of randomised trials  H.T. Lau, **W. Liu,** V. Lam, T. Pang  International Journal of Surgery (<https://doi.org/10.1016/j.ijsu.2022.106622>) |
| December 2018 | Life sciences in virtual reality: first-year students learning as creators  C. Hammang, P. Gough, **W. Liu**, E. Jiang, P, Ross, J. Cook, P. Poronnik  SIGGRAPH Asia 2018 Posters (<https://doi.org/10.1145/3283289.3283328>) |

**Additional courses**

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| July 2022 | Advanced Life Support Level 2 (Gosford Hospital) |

**Personal projects**

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| 2022 – current | STAT medicine (<http://statmedicine.github.io>)   * An online wiki and resource for new Junior Medical Officers to support in approaching common clinical calls and emergencies whilst working as after hours medical officer |
| 2022 – current | MEDIwiki (<http://mediwiki.github.io>)   * An online resource developed throughout my own learning for junior medical officers and interns as a reference for diseases and approaches to clinical problems |
| 2021 – current | Clinical Epidemiology Wiki (<http://epiwiki.github.io>)   * A wiki and collection of knowledge gained from epidemiology/biostatistics textbooks, research, and my masters degree |
| 2021 – current | Foundations of Medicine (<http://foundationsofmedicine.github.io/>)   * A collaborative effort between medical school peers to develop resources for teaching future medical students |