Anna Quaglieri (PhD)

BIOINFORMATICS DATA SCIENTIST

Mass Dynamics

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Employment

Senior Bioinformatics Data Scientist at Mass Dynamics, Melbourne
Jan24-Current

- Conduct product demonstrations for potential customers, actively engaging with them to understand their challenges;
- Oversee and mentor new scientists within the team;
- Provide expert advice on statistical and bioinformatics methods withing the team;
- Develop the scientific methods and sofwtare assets of the platform and provide customers with cunsulting and deliver analyses.

Bioinformatics Data Scientist at Mass Dynamics, Melbourne
May21-Dec2023

- Guide Product team decisions with regards to statistical and bioinformatics techniques;
- Support users with methods and platform consultation so that they can achieve their outcome;
- Develop the scientific methods and sofwtare assets of the platform. Developed R Package MassExpression ⬀ to support processing of label-free quantitative data.
- Participate and present at scientific conferences and contribute to scientific manuscript writing (Contributed to Bloom J et al (2021) ⬀)

Data Scientist Consultant at Eliiza, Melbourne
Nov19-May21

- Developed a Python workflow to pre-process and identify burnt areas from satellite images
- Led the development of a Python library to automate information extraction from documents. Now this is a product of the company Thea ⬀.
- Built classification models used and deployed into client's production environment

Tutor in Stastics at University of Melbourne
Mar18-May18

- "Critical thinking with data (UNIB10006)" and "Data and decision making (MAST90072)"

Bioinformatics Research Assistant, WEHI, Majewski Lab
Oct2019-Jan2019

- Completion of PhD projects published in two papers: Courtney D Nardo et al (2020)⬀ where I performed statistical analysis of the RNA-Seq data and Quaglieri et al, (2019), BMC Bioinformatics⬀ where I was the first author and performed all the analyses.

Bioinformatics Research Assistant, WEHI, Speed and Bahlo Labs
Sep13-Mar16

- Speed lab: Worked as the main statistician in epigenetics projects (Under publication) and collaborated in the creation of an R package for GC bias correction of ChIP-Seq data where the task was to upgrade existing R functions (unpublished work).

Bioinformatics Research Assistant, WEHI, Bahlo Labs
Sep13-Mar16

- Bahlo lab: Statistician in the team which discovered the first genetic clues for Macular Telangiectasia Type 2 disease through Genome-Wide Association study (Bahlo lab) (Scerri TS et al 2017, Nature Genetics) ⬀.

Education

PhD Student, WEHI Bioinformatics, Speed Lab
Feb16-Sept19

- PhD thesis: "Using transcriptomics to study relapse in acute myeloid leukaemia" ⬀. The research focused on building a statistical framework to improve the understanding of the relapse mechanisms in particular subtypes of Acute Myeloid Leukemia.

Master Degree in Statistics, Universities of Bologna and Melbourne
Sep12-Jul14

Master Thesis, WEHI Bioinformatics, Bahlo Lab
Sep12-Jul14

- Title: "Genome-Wide association study in presence of relatedness – Application to an eye disorder". Preparation and analysis of SNP-Chip data from patients with a rare genetic eye disease, known as MacTel. Goal to perform a pilot GWAS for a larger study that was conducted for Scerri TS et al, 2017, Nature Genetics ⬀

Internship in Biostatistics, S.Orsola-Malpighi Hospital, Bologna
Jul12-Sep12

- Part of Master degree. The work involved data collection, cleaning, statistical modeling and led to the publication Farioli A et al (2014) ⬀ which was awarded the ISICO Paper Prize in 2014

Undergraduate Degree in Statistics, Universities of Bologna and Glasgow
Sep09-Jul12

- Title of Statistics Senior Honours project in Glasgow supervised by Professor Marian Scott (University of Glasgow): "Cancer in dogs and quality of life impact". Data analysed using generalised additive models and mixed effect models for longitudinal data.

Leadership Roles

Bioconductor Code of Conduct (Secretary and Chair)
2023-2024

- The Bioconductor Code of Conduct (CoC) (CoC site: https://bioconductor.org/about/code-of-conduct/) aims to facilitate a welcoming, supportive and collegial experience free of harassment, intimidation, and bullying and the CoC Committee is responsible for enforcing and upholding them. My role as secretary (2021-2023) involved coordinating meeting schedules with committee members and managing the organisation of meeting minutes. In my role as chair (2023-2024) I was responsible for the overall board leadership, establishing meeting agendas and managing meetings and board conduct and I led the response to several incidents reports.

R-Ladies Melbourne (President and Co-organiser)
Oct16-Sep23

- The group (Meetup page: www.meetup.com/R-Ladies-Melbourne/), founded in 2016, is the first R Programming community for women and supporters in Australia. President of the group in 2017/2018 where we organised 12 events (workshops, seminars and networking nights) doubling in members; defined the structure to become a not-for-profit association; provided funding for women to attend the useR! conference; gained a new sponsor Nous Group and renewed sponsorship from CSL. Helped running and organising events since 2016.

Parkville Toastmasters (Vice President Memberships)
2022-2023

- As Vice President Membership (VPM) I'm in charge of running inductions with new members to intriduce them to the club and how Toastmasters work; setting up new members into the system; organising mentorship between new and established members.

useR! Conferences organising committee
2018/2019 Brisbane/Toulouse

- UseR! Is one of the most important annual international R conferences. Main task to review abstracts and scholarship applications. In Brisbane also organised the logistics of R-Ladies Melbourne travel scholarships to support national participants.

Workers Club Lions Australian Football Club (Treasurer and Captain)
2017-2021

- Treasurer: The role involves looking after incoming funds to the club which come from selling merchandise at the Workers Club and fundraising events. Captain: On field captain of the football team.

Mentor at BrainSTEMM
2018.0

- Co-mentored a group of four high school girls from Gippsland for a three months period. Students for exposed to what it means to do research in science; learnt coding and basic principles of statistics for the first time; presented their final work in an inspiring video and organised a coding day where they became coding instructors for their classmates.

Public speaking

Conference: American Society of Mass Spectrometry Conference Selected Poster
Jun23

- Exploring protein expression across multiple experiments using Mass Dynamics.

Invited speaker at Glycoscience: Clinical Glycoproteomics and Machine Learning
Apr23

- Mass Dynamics: The New Science of Collaboration (Event page: ⬀)

Conference: Lorne Proteomics 2023 Selected Poster
Feb23

- Mass Dynamics 2.0: The New Science of Collaboration

Department of Molecular Life Sciences, University of Zürich
Aug22

- Introductory talk to Mass Spectrometry-based Proteomics while visiting Mark Robinson laboratory in the Department of Molecular Life Sciences, University of Zürich.

Conference: American Society of Mass Spectrometry Conference
Jun22

- Selected talk at ASMS (American Society of Mass Spectrometry) 2022 talk on automated benchmarking. Title: Automated benchmarking enables continuous confidence in scientific software development.

Invited speaker at data science career events (Australia)
2021-2022

- Invited speaker at the Victorian branch of the Satistical Society of Australia (SSA VIC) Industry Showcase Night (2021)
- Invited speaker at the Women in Machine Learning and Data Science (WiMLDS) Career Transitions in ML and AI meetup in Melbourne (2021)
- Invited speaker at the SSA VIC Early Career Panel (2022)

Invited speaker at data science career events (R-Ladies Baltimore)
Nov21

- Panel Discussion on Careers in Data Science (Event page: shorturl.at/akvDG)

Speaker at R-Ladies Melbourne
Aug2021

- Title: A remote glimpse into the useR! 2021 conference (Recording: ⬀)

Virtual Brown Bag by Eliiza
Sep20

- Title: "Automating Data Extraction from documents" (Recording: ⬀)

PhD completion seminar (WEHI)
Aug19

- Title:Using the transcriptome to study therapy response in luekaemia (Recording: ⬀)

Invited talk at the Monash Bioinformatics weekly seminar
Apr18

- Title: A suite of Bioinformatics tools to call and explore somatic mutations over time from RNA-Seq (Slides: ⬀)

Speaker at R-Ladies Melbourne monthly meetup
Feb18

- Title: Producing publication ready document in R Markdown (Slides: ⬀)

Conference: ABACBS Selected talk *Dec18*

- Title: Correcting unwanted variation in RNA-seq data derived from a multicentre study of Leukemia (Slides ⬈)

Conference: Bioconductor Asia conference Invited Speaker *2017/2018*

- Invited talk to represent R-Ladies Melbourne (Slides: ⬈)

Conference: Royal Statistical Society Selected Talk, Cardiff *Sep18*

- Short talk: "Correcting unwanted variation in RNA sequencing data from a multi-centre study of leukaemia (Slides ⬈)

Conference: useR! 2018 Selected Workshop Presenter, Brisbane *Jul18*

- Looking to clean your data? Learn how to Remove Unwanted Variation with R (tutorial video ⬈) and Introduction to textual analysis of social media data with R, using the idytext approach (tutorial video ⬈)

Conference: COMBINE Invited instructor, Melbourne *2017*

- Workshop title: "Introdcution to Bioconductor". Invited to prepare and lead part of the one-day workshop. Material at https://github.com/COMBINE-Australia/2017-05-19-bioconductor-melbourne.

Conference: COMBINE Selected Poster and Talk *2016*

- Poster Title and Short Talk: Finding Optimal Coverage to sequence RNA (Slides: ⬈)

Publications

- A.J. Kueh; M.I. Bergamasco: **A. Quaglieri**; B. Phipson; C. S. N. Li-Wai-Suen; I.M. Lönnstedt; Y. Hu 2; Z. Feng; C. Woodruff; R.E. May; S. Wilcox; A.L. Garnham; M.P. Snyder; G.K. Smyth; T.P. Speed; T. Thomas; A.K. Voss 7 (2023) "Stem cell plasticity, acetylation of H3K14, and de novo gene activation rely on KAT7". Cell Reports. DOI: 10.1016/j.celrep.2022.111980 ⬈
- **A. Quaglieri**; J. Bloom; A. Triantafyllidis; B. Green; M.R. Condina; P. Burton Ngov; G. Infusini; A. Webb (2022) "Mass Dynamics 2.0: An improved modular web-based platform for accelerated proteomics insight generation and decision making". BioRxiv. DOI: `https://doi.org/10.1101/2022.12.12.517480` ⬈
- J. Bloom; **A. Quaglieri**; A. Triantafyllidis; P. Burton Ngov; G. Infusini; A. Webb (2021) "Mass Dynamics 1.0: A Streamlined, Web-Based Environment for Analyzing, Sharing, and Integrating Label-Free Data". Journal of Proteome Research. DOI: 10.1021/acs.jproteome.1c00683 ⬈
- **A. Quaglieri**; C. Flensburg; T.P Speed; Ian J Majewski (2020). "Finding a suitable library size to call variants in RNA-Seq". BMC Bioinformatics 21, 553. DOI: `https://doi.org/10.1186/s12859-020-03860-4` ⬈
- C. D. DiNardo; I. S. Tiong; **A. Quaglieri**; S. MacRaild; S. Loghavi; F. C. Brown; R. Thijssen; G. Pomilio; A. Ivey; J. M. Salmon et al. (2020) "Molecular Patterns of Response and Treatment Failure after Frontline Venetoclax Combinations in Older Patients with AML". Blood 135 (11): 791-801. DOI: 10.1182/blood.2019003988 ⬈
- **Anna Quaglieri** (2019) PhD Thesis: "Using transcriptomics to study relapse in acute myeloid leukaemia", Published at University of Melbourne ⬈
- TS Scerri; **A. Quaglieri**, C. Cai; J JZernant; N. Matsunami; L. Baird; L. Scheppke; R. Bonelli; LA Yannuzzi; M. Friedlander; MacTel Project Consortium; C.A. Egan; M. Fruttiger; M. Leppert; R. Allikmets; M. Bahlo (2017) "Genome-wide analysis identifies common variants associated with macular telangiectasia type 2" Nature Genetics 49(4):559-567. DOI: 10.1038/ng.3799 ⬈
- A. Farioli; S. Mattioli; **A. Quaglieri**; S. Curti; F.S. Violante; D. Coggon (2014) "Musculoskeletal pain in Europe: the role of personal, occupational, and social risk factors." Scandinavian Journal of Work, Environment & Health 40(1):36-46. DOI: 10.5271/sjweh.3381 ⬈

Public Outreach

2017   **Research Video – "A genetic treasure map: new research into MacTel"**: Short Movie: https://bit.ly/2CWnu2H. This short movie tells the story of our WEHI team's discovery of the genetic causes of MacTel published in Thomas S et al., Nature Genetics, 2017.

2018   **R-Ladies blog posts**: Summary and learnings after being the main organiser of the group in 2018: https://r-ladiesmelbourne-team.netlify.app/ and https://rladiesmelb2018.netlify.app/.

Awards and scholarships

2018   **Poster Prize - COMBINE Conference**: Poster title: Correcting for unwanted heterogeneity in RNA sequencing data derived from a multicentre study of leukemia.

2016/2017   **Travel Grants – Bioconductor Asia Conference**: Both years invited to present about R-Ladies Melbourne achievements.

2016   **Travel Grant – ABACBS Bioinformatics conference**: Presented poster short Talk: Finding Optimal Coverage to sequence RNA (Slides: shorturl.at/dlorS)

2016   **Poster Prize and Speaker prize – ABACBS and COMBINE Conferences**: Poster and short talk title: Finding a suitable library size to call mutations from RNA Sequencing.

2016   **AMSI Scholarship**: Winter school in Biological and Environmental Mathematical Modelling, Brisbane

2014   **ISICO Paper Prize**: Price from the Italian Scientific Institute of the Spinal Cord – 2014 for Farioli A et al, 2014.

2011/2013   **Scholarships - University of Bologna**: Funding to study at the University of Glasgow (2011); at the University of Melbourne and WEHI (2013)