

# Jack Griffiths

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## SUMMARY

Neuroscience MRes researcher specialising in multicellular neural culture systems, electrophysiological network analysis, and in vitro modelling of neurotrauma. Experienced in rodent brain dissection, immunocytochemistry, and microelectrode array (MEA) electrophysiology to quantify cellular viability and functional network dynamics. Background in data science and software engineering enables rigorous computational analysis and experimental design. Seeking PhD or Research Assistant roles in neural tissue engineering, network physiology, and translational neurotechnology.

## EDUCATION

- **MRes Bioscience (Neuroscience)** Keele University, UK  
*Expected Feb 2026* *Sep. 2024 – Feb. 2026*
- **BSc Neuroscience (Hons)** Keele University, UK  
*2:1* *Sep. 2022 – Jun. 2024*

## EXPERIENCE

- **Keele University - Neural Tissue Engineering Lab** Keele, UK  
*Graduate Researcher (MRes Thesis)* *Jan. 2025 – Feb. 2026*
  - **Thesis:** Establishing a Streamlined Multicellular Cerebellar Model in Vitro (85%)
  - **Protocol Development:** Adapted and optimised a cortical dissociated culture protocol for cerebellar tissue, integrating a Hibernate-based delayed dissociation workflow to improve logistical flexibility and reduce animal usage in line with 3R principles.
  - **Cell Culture:** Established and maintained multicellular cerebellar co-cultures, performing quantitative immunocytochemical analysis to determine neuronal and glial subtype proportions and assess cellular morphology.
  - **Microelectrode Arrays:** Recorded and analysed spontaneous network activity using microelectrode array (MEA) electrophysiology, quantifying firing rate, synchrony, and burst dynamics to characterise functional connectivity.
  - **Rodent Dissection & Tissue Slicing:** Performed rodent brain dissection and cerebellar tissue preparation for both fixed immunostaining and live culture experiments.
  - **Co-authored Publication in Gels (2025):** "Development of a Three-Dimensional Pathology-Simulating Model of Neurotrauma Using a Polymer-Encapsulated Neural Cell Network" DOI: 10.3390/gels11040247
- **Keele University** Keele, UK  
*Undergraduate Research - Neuroscience* *Jan. 2024 - August 2024*
  - **Undergraduate Research Project:** Conducted a PRISMA-guided systematic review and meta-analysis evaluating Psilocybin for Major Depressive Disorder, concluding that perceptual doses significantly reduce depressive symptoms versus placebo, are comparable to escitalopram, and that microdosing shows no clinical effect - Grade 72%
- **Mail Solutions Group** Telford, UK  
*Project Manager - Headed up new start-up eco-friendly products, paper straws division* *Dec. 2018 - Sep. 2021*
  - **International Research:** Organised and facilitated an international research trip to China, collaborating with manufacturers and suppliers to establish key partnerships.
  - **Investment:** Grew the division from start-up to £300,000 turnover and secured a further £500,000 in investment into world-leading machinery, the first of its kind in the UK, projecting a £1,500,000 turnover.
  - **BRC-Accredited Facility:** Planned and oversaw the construction of a BRC-certified food packaging manufacturing facility (360m<sup>2</sup>).
  - **Team Leadership:** Led and managed a cross-functional team through rapid start-up growth, ensuring consistent output and high morale in a demanding production environment.
  - **Client Relations:** Built strong relationships with customers across the UK, Europe, and the Middle East.
  - **Sales Strategy:** Collaborated with the Sales Director to create targeted sales plans and drive lead generation.
  - **Team Expansion:** Recruited and onboarded six employees, establishing an efficient 18/6 work schedule.

- Capgemini**  
*Software Engineer - HMRC Aspire Project*
  - **Big Data Integration:** Gained extensive experience in resolving challenges related to ingesting standardised and non-standardized data into a centralised Big Data hub.
    - **Data Ingestion and Processing:** Developed and executed Pentaho scripts to ingest and interpret HMRC taxpayer data efficiently. Extracted and processed data using MySQL, Impala, and Beeline for accurate analysis.
    - **Java Development:** Supported the development and documentation of our in-house bespoke standardisation solution.
    - **Git Administrator:** Took ownership of administering Bitbucket, the git solution used for storing all company project data.

Telford, UK  
Nov. 2015 - Sep. 2018
- Capgemini**  
*Data Scientist - McDonald's Project*
  - **Big Data Implementation:** Contributed to McDonald's pilot Big Data and Analytics project, implementing advanced technologies such as Paxata and Waterline Data to optimise data processing. Conceptualized and prepared large-scale datasets for big data analysis, ensuring seamless integration with new technologies.
    - **Training:** Delivered training sessions on Paxata and Waterline Data, equipping analysts to manage and process McDonald's vast datasets effectively.
    - **Technical Documentation:** Developed comprehensive documentation to support the McDonald's business analytics team in adopting new tools.
    - **Stakeholder Collaboration:** Liaised with managers and clients to facilitate the successful handover and adoption of new technologies.
    - **Certification:** Earned certification as a Paxata Data Analyst, demonstrating technical expertise in big data analytics tools.

London, UK  
Sep. 2018 - Dec. 2018
- Logicomm 2000**  
*Computer Engineer - Apprenticeship*
  - **Server and Network Deployment:** Implemented server stacks, including Active Directory and Exchange services, and optimised customer networks with CAT 5e/CAT 6 cabling, firewall, and router configurations.
    - **Technical Support:** Provided cross-platform support for Windows, Mac, and Linux, including remote assistance via ScreenConnect and hardware deployment for customer needs.
    - **Wi-Fi and Connectivity:** Installed long-distance Wi-Fi bridges using Ubiquiti systems to extend reliable connectivity.
    - **Web and Task Management:** Designed and edited customer websites while managing support tickets using Spiceworks for efficient task tracking.

Cannock, UK  
Sep. 2014 - Nov. 2015

## TECHNICAL SKILLS

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- **Experimental Techniques:**
  - Primary rodent cerebellar dissociation and culture
  - Multicellular neuron–glia co-culture optimisation
  - Immunocytochemistry (fluorescent labelling)
  - Confocal and phase-contrast microscopy
  - Microelectrode array (MEA) electrophysiology
  - Acute tissue slicing and live slice preparation
- **Computational & Analytical:**
  - Python, R, MATLAB, Java
  - ImageJ/Fiji quantitative image analysis
  - SQL and ETL pipelines (Hadoop ecosystem)
  - Git version control