

ANGUS FORREST

BRITISH AND NEW ZEALAND DUAL NATIONAL

+44 7493 461960

contact@angusforrest.com

Bromley, London

orcid.org/0009-0008-0355-5809

First Class Honours graduate in Mathematical Physics and pending Masters in Astronomy with published research in computational modelling and large-scale dynamical systems. Won 7 academic awards over the past 5 years. Experienced in data analysis, cloud infrastructure, and communicating complex quantitative concepts to non-specialist audiences. Seeking to apply strong analytical and technical foundations in a finance or information services environment.



KEY STRENGTHS

TECHNICAL MACHINE LEARNING IMPLEMENTATION	COMMUNICATION EXPLAINING IDEAS TO DIVERSE GROUPS	RELATIONSHIP BUILDING ONBOARDING POTENTIAL CLIENTS	CLIENT SERVICE SUPPORTING CUSTOMERS WHEN THINGS GO WRONG
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CRITICAL SKILLS

 SOFTWARE DEVELOPMENT	 MACHINE LEARNING	 BAYESIAN STATISTICS	 COMPUTER NETWORKING
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EMPLOYMENT

Dec 2024 – Feb 2026

Junior Astrophysics Researcher

University of Canterbury · Ōtautahi-Oxford Interstellar Object Working Group

Member of the Ōtautahi-Oxford Interstellar Object working group: an international research group spanning New Zealand and the UK. Worked under the world-renowned Professor Chris Lintott (University of Oxford and Gresham Professor of Astronomy) and Associate Professor Michele Bannister (University of Canterbury and first author on seminal paper on origin of interstellar objects). Active participant in weekly all-hands meetings and contributed to small-group research projects. Contributed to two peer-reviewed publications in The Astrophysical Journal.

2022 – 2025

Senior Academic Support Staff – Tutor

University of Canterbury

STARS Mathematics (MATH199), second-year engineering (EMTH210), and undergraduate linear algebra (MATH210). Tutored more than 1,000 students across varying levels of ability — from accelerated secondary school students entering first-year mathematics to those building foundational skills without prior accreditation — accumulating over 500 contact hours. Consistently aimed to exceed syllabus expectations, treating course requirements as a floor rather than a ceiling.

2024	Experienced Mathematics Tutor STARS Mathematics (MATH199) · Pre-Calculus (MATH101) · Discrete Mathematics (MATH120)
2024	Astronomy Department Teaching Assistant First year field trips to Mount John Observatory
2023	Mathematics Tutor STARS Mathematics (MATH199) · Pre-Calculus (MATH101) · Discrete Mathematics (MATH120)
2022	Junior Mathematics Tutor Discrete Mathematics (MATH120)

Dec 2024 – Jan 2025

Bartender and Host

Otoromiro Hotel · Seasonal — Christmas and New Year

Front-of-house service and bar operations during peak holiday season. Managed high-volume, fast-paced service under sustained pressure while maintaining standards of client care throughout long shifts.

Sep 2022 – Mar 2023

Online Webinar Host — HR Corporate Training Facilitator

Simitri International

Facilitated online professional development seminars for senior staff and executives at international engineering firms. These seminars covered governance, leadership, and upper management obligations. Operated independently and remotely across time zones with audiences of hundreds of participants.

● OUTREACH AND COMMUNITY ENGAGEMENT

2023 – 2025

University of Canterbury STARS Mid-Year Mathematics Workshop

University of Canterbury · One week residential program

Provided residential assistant services and student outreach, motivating prospective students to enrol at University of Canterbury.

Jul 2025

Mid-Year Workshop

University of Canterbury

Jul 2023

Mid-Year Workshop

University of Canterbury

2024 – 2025

University of Canterbury STARS Maths Program Orientations

University of Canterbury · Secondary school outreach visits

Feb 2025

New Zealand North Island

Hutt Valley High School · Waiopahu College · Wellington College · Palmerston North Boys' High School

Feb 2024

New Zealand South Island

James Hargest, Invercargill · Wakatipu High School, Queenstown · Mount Aspiring College, Wanaka

2020

Speaker — Rotary Science and Technology Forum

Queenstown Rotary Club

2019

Outward Bound — Three Week Course, New Zealand

Outward Bound New Zealand · Mind, Body, Soul

Three-week intensive leadership and personal development programme in the New Zealand wilderness.

Developed leadership, communication, and personal responsibility through sustained physical and mental challenge across a range of outdoor pursuits.

● EDUCATION

2025

MSc in Astronomy

University of Canterbury · Supervised by Associate Professor Michele Bannister and Dr John Forbes

Investigated the evolution of density and velocity dispersion of streams of interstellar objects in the Galactic disk under the supervision of Associate Professor Michele Bannister and Dr John Forbes.

2024

First Class BSc(Hons) in Mathematical Physics

University of Canterbury

Investigated the dynamical heating of streams of interstellar objects by giant molecular clouds under the supervision of Associate Professor Michele Bannister and Dr John Forbes. Completed courses in abstract algebra, quantum field theory, projective geometry.

2021 – 2023

BSc in Mathematics and Physics

University of Canterbury

Double major in mathematics and physics with electives in organic chemistry.

• AWARDS

2020 – 2025

University of Canterbury

University of Canterbury

- 2025 **School of Physical and Chemical Sciences Masters Research Scholarship**
NZD \$18,000 stipend + \$11,000 tuition (approx. £13,300 GBP) · Awarded to 3 of 30 eligible candidates
- 2023 **School of Physical and Chemical Sciences Summer Research Scholarship**
Competitive research scholarship
- 2022 **Mathematics and Statistics Scholarship**
Awarded to 25 of 300 students (top 8% of cohort)
- 2020 **AIMS Scholarship**
Awarded to 120 of 400 applicants (top 30% of cohort)

2021

Warwick Sherwood Scholarship

Bishop Julius Hall (Arcady Hall) · Awarded to 1 of approximately 200 residential students

2020

NCEA Scholarship in Mathematics and Statistics

New Zealand Government · Awarded to approximately 3% of candidates

2020

Rotary Science and Technology Forum

Queenstown Rotary Club · Paid Trip

• PUBLICATIONS

 orcid.org/0009-0008-0355-5809

2026

Semianalytic Orbits: A Practical Implementation of Lynden-Bell's Planar Orbits and Extension to Vertical Oscillations

The Astrophysical Journal · DOI: 10.3847/1538-4357/ae1a43

Forbes, J. C.; Bannister, M. T.; Forrest, A.; DSouza, I.; Patterson, J. — Presents a practical implementation of perturbation theory for describing, to arbitrary precision, the orbit of a particle in an arbitrary spherically-symmetric potential. Corrects errors in the original derivation and extends the formalism with a numerical method to efficiently solve the analogue to the Kepler problem, and a method to track vertical oscillations about an axisymmetric disk even when the oscillation frequency varies with radius. Guarantees conservation of energy, angular momentum, and related quantities, evaluating position and velocity in constant time. Implemented in Python and pip-installable as the package `lbparticles`.

2025

He Awa Whiria: The Tidal Streams of Interstellar Objects

The Astrophysical Journal, vol. 988, no. 1 · DOI: 10.3847/1538-4357/adre3b · arXiv:2411.14577

Forbes, J. C.; Bannister, M. T.; Lintott, C.; Forrest, A.; Portegies Zwart, S.; Dorsey, R. C.; Albrow, L.; Hopkins, M. J. — Peer-reviewed study modelling the tidal streams of interstellar objects (ISOs) orbiting the Milky Way, predicting that the Sun is embedded in $\sim 10^6$ or more such streams and that future surveys may detect ISOs sharing a common stellar origin.

• CONFERENCES AND PRESENTATIONS

Feb 2026

Transients in Middle Earth — Participant

University of Canterbury Transients Group · Ōtautahi (Christchurch), Aotearoa New Zealand
Time-domain astronomy conference, 9–13 February 2026.

2024

NZ Gravity Workshop — Participant

Wellington (University of Victoria)

2024

Extreme Solar Systems VI — Volunteer and Participant

Christchurch (University of Canterbury)

Jan 2020

Science and Technology Rotary Forum — Participant

Auckland (UoA, AUT, Massey)

SKILLS

ARTIFICIAL INTELLIGENCE / MACHINE LEARNING

- ↘ Gradient Descent
- ∞ Normalising Flow
- ⚙ Model Context Protocol
- 🗣 LLM APIs (Claude, OpenAI, Gemini, KIMI)

SOFTWARE DEVELOPMENT / DATA PROCESSING

- 📊 Excel
- 📦 pandas
- { } Python
- Ⓜ R

ANALYSIS TOOLS

- ↘ Auto-correlation
- ∑ Bayesian Statistics
- 📐 Calculus
- ⊠ Partial Differential Equations

SERVER INFRASTRUCTURE

- ☁ AWS / Azure
- 🐳 Docker
- 🐧 Linux
- >_ SSH

REFERENCES

"I had the privilege of being Angus's supervisor during his honour's and master's projects at the University of Canterbury in New Zealand. As part of that work, Angus made substantial contributions to several international collaborations, reflected in his co-authorship on a number of scientific journal articles. We particularly valued his exceptional technical ability, including writing modular code that could be easily parallelised and run on GPUs where appropriate, and doing so with modern software development practises. He also has an excellent combination of curiosity about new tools and techniques, the insight to design clever experiments, and the temperament to both gather and disseminate insights and feedback from a wide range of knowledgeable people."

DR. JOHN FORBES

Post Doctoral Fellow, School of Physical and Chemical Sciences, University of Canterbury
+64 3 369 3184 · john.forbes@canterbury.ac.nz
Available: Weekdays 9am–5pm NZST

"I employed Angus for three years to tutor in a 100-level mathematics course targeted at senior high school students. The role involved facilitating small-group online sessions as well as larger in-person weekly classes. In addition, Angus travelled across the country on several occasions, representing the university and providing orientation support to incoming students, and contributed to the delivery of a mid-year residential workshop. Throughout my interactions with him, I have found Angus to be conscientious, capable, and curious. I trust that any task I delegate to him will be completed to a high standard, and that he will seek support proactively and well in advance of deadlines. In 2025, I also saw him grow into an experienced tutor, leading with confidence and mentoring newer members of the team. While I am sorry to see him leave, I am confident he will continue to excel and would recommend him without reservation."

JAMES BARTLETT


UC STARS Mathematics Coordinator, University of Canterbury
james.bartlett@canterbury.ac.nz
Available: Weekdays 9am–5pm NZST


"It is with pleasure that I write this character reference for Angus Forrest as I have known him throughout his life as a family friend. I have seen him obtain some outstanding academic achievements as well as become a well-balanced and determined individual. He has always been a very honest and trustworthy person that you can rely on to complete task to the highest level. He is always happy to take on a challenge or to help people out and can work well in teams or as an individual. Although Angus has not worked for me, I feel that any company would be lucky to have him as an employee and he would quickly become a valuable team member."


PETE MCKAY


CFO, Babich Wines
pete.mckay@babich.co.nz
Available: Weekdays 9am–5pm NZST

INTERESTS


Music — Guitar and Piano


Running


Personal Finance and Investing


Repair and Restoration