Urgent PhD opportunities at Imperial Computing for Physics MSci graduate

Your deadline pressure is real, but Imperial Computing offers exceptional matches for this candidate's physics+ML+computational profile. With 80% funding success [Imperial College London ↗](#) and multiple aligned faculty, immediate action can secure strong positions for Oct 2026 entry. [Imperial College London ↗](#)[PhDportal ↗](#)

Critical timeline: The December 15, 2025 deadline is essential for overseas funding consideration. [Imperial College London ↗](#) Imperial's unique protocol requires submitting the formal application BEFORE contacting supervisors—applications are then circulated to faculty based on research statements and listed supervisors. [Imperial College London +2 ↗](#)

Immediate action plan (next 48 hours)

Priority 1: Submit formal application immediately through Imperial's online portal. The application requires: CV, combined personal/research statement (4-7 pages as single PDF), academic transcripts, two references, and listing 3-4 potential supervisors. [Imperial College London +3 ↗](#) Imperial explicitly recommends applying before contacting academics, [Imperial College London ↗](#) unlike most UK universities. [imperial +2 ↗](#)

Priority 2: List these supervisors (select 3-4 to maximize interview chances): [Imperial College London ↗](#)

- Dr Roberto Bondesan (quantum computing + ML)
- Dr Calvin Tsay (optimization + ML - has funded position advertised)
- Prof. Gerard Gorman (computational science - BSc Physics background)
- Prof. Paul Kelly (HPC, GPU computing)

Priority 3: After submission, send brief emails to listed supervisors referencing your application and highlighting physics+ML+CUDA expertise.

Top faculty matches ranked by fit

Tier 1: Exceptional alignment (Contact these first)

Dr Roberto Bondesan - Senior Lecturer at I-X Innovation Hub
r.bondesan@imperial.ac.uk | Room 354, Huxley Building

Why he's perfect: Bondesan has the exact research profile this candidate needs. His work sits at the intersection of quantum computing, machine learning, and many-body physics. He developed neural network-based decoders for quantum error correction, uses variational methods for quantum states, and recently published on polynomial-time quantum Gibbs sampling with Mario Berta. His background mirrors the candidate's trajectory—PhD in theoretical condensed matter physics (disordered and topological phases) before moving to Qualcomm AI Research, then joining Imperial Computing. [Dqc-app ↗](#)

Research areas: Quantum error correction with ML, classical benchmarking of quantum algorithms, quantum many-body systems representation using neural networks, machine learning for quantum state preparation [Imperial College London ↗](#)[Imperial ↗](#)

Why the candidate fits: The candidate's QFT and statistical physics background directly applies to Bondesan's quantum many-body work. PyTorch and JAX skills align perfectly with his neural network approaches. His CUDA/GPU experience from the 115x ARFF speedup matches Bondesan's computational focus. This is arguably the single best match at Imperial Computing.

Current status: Actively supervising PhD students (started new cohort Oct 2024), part of QuEST center with secure funding, ~605 citations showing strong research impact

Dr Calvin Tsay - Lecturer in Computing
c.tsay@imperial.ac.uk | Room 560, Huxley Building

Why he's exceptional: Tsay leads research on optimization over trained neural networks—directly relevant to the candidate's XGBoost and neural network experience. He develops OMLT (Optimization & Machine Learning Toolkit) for integrating neural networks into optimization problems, exactly the type of computational methods work that bridges ML and scientific computing. His BASF/Royal Academy of Engineering Senior Research Fellowship demonstrates strong funding track record.

Research areas: Optimization under uncertainty, Bayesian optimization, multi-fidelity methods for engineering, Sobolev-trained neural networks, surrogate modeling for process systems

Advertised position: Currently has a fully funded PhD position in "Optimisation and Machine Learning" (£19,668+ stipend, likely ~£22,780 in 2026, full tuition coverage for home and overseas students)

Why the candidate fits: The equity factor alpha engine with XGBoost and neural networks for Higgs measurements show exactly the ML surrogate modeling skills Tsay needs. Physics background provides strong mathematical foundation for optimization theory. Computational skills (NumPy, Pandas) align with his toolkit development.

Prof. Gerard Gorman - Professor, Department of Earth Science & Engineering
g.gorman@imperial.ac.uk | CEO, Devito Codes

Why he's transformational: Gorman has precisely the background trajectory this candidate is pursuing: BSc Physics → MSc Computing → PhD Computational Physics → Professor. [LinkedIn]↗ He leads development of Devito, an open-source Python DSL for automated stencil computation with GPU support, using code generation philosophy similar to JAX. [Devito Codes]↗ His research on high-performance computing, GPU acceleration for PDEs, and automatic code generation directly leverages the candidate's 115x speedup achievement using JAX/CUDA. [LinkedIn]↗

Research areas: Code generation and compilers for scientific computing, domain-specific languages, GPU acceleration, numerical modeling, inverse problems, seismic imaging [LinkedIn]↗

Why the candidate fits: The KAUST research achieving 115x speedup in ARFF algorithm using JAX/CUDA is precisely the type of work Gorman's group does. Physics background provides domain knowledge for computational physics applications. The candidate can contribute to Devito development or related GPU optimization projects. Strong industry connection through Gorman's Devito Codes startup.

Note: While in Earth Science, Gorman collaborates extensively with Computing (especially Paul Kelly). [Imperial College London]↗ Joint supervision is common and encouraged at Imperial.

Tier 2: Strong matches (Excellent alternatives)

Dr Mario Berta - Visiting Reader (Professor at RWTH Aachen)
mberta@imperial.ac.uk | Huxley Building

World-class quantum information theorist with ~8,234 citations. Leading £3M EPSRC "Distributed Quantum Computing" project. [Imperial College London +2]↗ Recently published "Quantum algorithms: A survey of applications and end-to-end complexities" (Cambridge University Press, 2025). [Dqc-app]↗[Marioberta]↗ His work on resource-efficient quantum algorithms and quantum many-body systems aligns well with computational physics background. Caveat: Split appointment between Imperial and RWTH Aachen means less on-site presence.

Research areas: Quantum algorithms (especially resource-efficient), quantum cryptography, Gibbs sampling, Green's functions computation, quantum state preparation [imperial]↗

Why the candidate fits: Strong physics background (QFT, statistical physics) aligns with his many-body systems work. Computational skills suit his focus on algorithm efficiency and resource analysis.

Prof. Kin K. Leung - Tanaka Chair in Internet Technology
kin.leung@imperial.ac.uk | Room 810a, EEE Building (joint EEE & Computing)

Leading £3M EPSRC "Distributed Quantum Computing and Applications" project (Imperial/UCL collaboration). [Dqc-app ↗](#)[Imperial College London ↗](#) His group publishes extensively on quantum approximate optimization algorithms (QAOA), noise-aware distributed quantum computing, and hybrid quantum-classical systems. Multiple active PhD students publishing in top venues. Excellent for applied quantum algorithms and optimization rather than fundamental quantum physics.

Research areas: Distributed quantum computing, quantum networking, QAOA, hybrid quantum-classical optimization, applications to wireless networks [Dqc-app ↗](#)

Why the candidate fits: ML experience (especially optimization algorithms) translates well to QAOA work. Computational background suits distributed systems research. Strong industry connections for applied projects.

Prof. Paul Kelly - Professor of Software Technology
p.kelly@imperial.ac.uk | Room 304, William Penney Laboratory

Leads Software Performance Optimization group [Imperial College London ↗](#) with expertise in GPU computing, compiler optimization, and scientific computing. [ResearchGate ↗](#)[ResearchGate ↗](#) Co-develops Firedrake (with David Ham) for automated finite element computation. [ResearchGate ↗](#)[ACM Digital Library ↗](#) His work on temporal blocking for stencil operators and code generation for heterogeneous architectures [Imperial College London ↗](#)[Imperial College London ↗](#) directly relates to JAX-like automatic optimization approaches. [Imperial College London ↗](#)[Imperial College London ↗](#)

Research areas: High-performance computing, GPU acceleration, domain-specific languages for computational science, compiler optimization, [Google Scholar ↗](#) finite element methods [ResearchGate ↗](#)

Why the candidate fits: The 115x speedup achievement demonstrates exactly the performance optimization mindset Kelly's group cultivates. CUDA/GPU experience is directly applicable. Physics background provides scientific computing domain knowledge.

Prof. Ruth Misener - BASF/RAEng Research Chair in Data-Driven Optimization
r.misener@imperial.ac.uk | Room 379, Huxley Building

Co-developer of OMLT (with Tsay), making her work highly complementary. [Imperial College London ↗](#) Holds multiple prestigious grants (ERC, EPSRC Early Career Fellowship, Google Faculty Research Awards, Amazon AWS ML Research). Focuses on global optimization, machine learning for chemical engineering, and Bayesian optimization for experimental design. Royal Academy of Engineering Sir George Macfarlane Medal (2017).

Research areas: Mixed-integer nonlinear optimization, ML at interface with operations research, Bayesian optimization, process optimization under uncertainty

Why the candidate fits: Quantitative finance experience (crypto trading bot, equity factor models) demonstrates optimization under uncertainty skills. ML background (XGBoost, PyTorch) aligns with her ML-optimization integration work.

Prof. Wayne Luk - Professor of Computer Engineering
w.luk@imperial.ac.uk | Room 434, Huxley Building

Director of EPSRC Centre for Doctoral Training in High-Performance Embedded and Distributed Systems. [Imperial College London ↗](#) Has supervised 50+ PhD students. [Imperial College London ↗](#) Fellow of Royal Academy of Engineering, IEEE, and BCS. [Imperial College London ↗](#) Specializes in FPGA-based machine learning acceleration and high-performance financial computing (Monte Carlo simulators).

Research areas: Hardware acceleration (FPGAs), reconfigurable computing for ML, high-performance financial computing, design automation

Why the candidate fits: CUDA/GPU acceleration experience translates to FPGA work. Financial computing background (crypto trading bot) aligns with his Monte Carlo simulation research. PyTorch experience relevant to ML hardware acceleration.

Currently advertised funded positions

Positions highly relevant to candidate profile:

1. PhD Studentship in Optimisation and Machine Learning (Dr. Calvin Tsay)
Full funding for home and overseas students (tuition + stipend £19,668+ per annum). Focus on computational optimization over trained ML models. Strong mathematical background required—physics degree provides this.

2. Two PhD Studentships in Affordable Deep AI for Brain Mapping (Dr. Islem Rekik, BASIRA Lab)
Full funding for home and international students. Deep learning for brain imaging. Less direct physics connection but ML skills highly relevant.

3. Hitachi-Imperial PhD in Sustainable Blockchain Applications (Prof. William Knottenbelt)
Full funding (£21,237 stipend). Start date flexible (Jan 2025 or rolling to 2026). Blockchain for climate finance. Computational methods + optimization background applicable.

Additional funding mechanisms:

EPSRC Doctoral Training Partnership: 6 competitive studentships for Oct 2026, automatic consideration if meeting criteria (First Class or Distinction Masters). UK/eligible EU students. Covers £22,780 stipend + fees + £1,000 travel/equipment. [Imperial College London ↗]

President's PhD Scholarships: 50 college-wide (Computing nominates 2 per round). [Global South Opportunities ↗]
Three rounds for 2026-27 entry:

- Round 1: November 3, 2025 (notification January 31)
- Round 2: January 12, 2026 (notification March 31)
- Round 3: March 2, 2026 (notification May 31) [Imperial College London ↗]

Covers full fees (international eligible), £26,500 stipend, £2,000 consumables for 3.5 years. [Global South Opportunities ↗]

Teaching Scholarships: 4 available, 4.5-year duration, ~£27,500 annually including fees (international eligible). Teaching requirement approximately 15 months full-time equivalent spread over scholarship. Recommended deadlines: March 1 or May 1, 2026. [Imperial College London ↗][imperial ↗] Contact: Dr. Mark Wheelhouse (mark.wheelhouse@imperial.ac.uk).

AI4Health CDT: Premier center training 120+ researchers with £28 million UKRI funding. [Imperial College London ↗] Director: Prof. Aldo Faisal. Apply by February 1, 2026 recommended. Fully funded 4-year program (£22,780 stipend). Physics background explicitly welcome. Still accepting home/UK applications; international applications closing July 31, 2025 (may already be closed for international).

Research project ideas matching candidate strengths

1. Machine learning for quantum error correction
Supervisor: Dr. Roberto Bondesan
Leverage neural networks (PyTorch) to develop decoders for quantum error correction codes. Combine quantum many-body physics knowledge with ML architecture design. Could explore connections between statistical physics (phase transitions) and error correction thresholds.

2. GPU-accelerated quantum algorithms for many-body systems
Supervisors: Dr. Mario Berta + Dr. Roberto Bondesan (co-supervision)
Develop resource-efficient quantum algorithms for condensed matter problems. Use CUDA/JAX skills to create classical

benchmarks and hybrid quantum-classical simulators. Physics background (QFT, statistical mechanics) directly applicable.

3. Optimization over physics-informed neural networks
Supervisor: Dr. Calvin Tsay
Extend OMLT framework for physics-informed constraints. Use Higgs boson measurement experience to develop ML models with physical constraints for particle physics applications. Combine optimization theory with ML surrogate models.

4. JAX-based code generation for scientific computing
Supervisors: Prof. Gerard Gorman + Prof. Paul Kelly
Extend Devito's automatic code generation with JAX-style automatic differentiation. Focus on GPU optimization for computational physics problems. Build on KAUST 115x speedup achievement to develop general-purpose performance optimization tools.

5. Distributed quantum computing resource allocation
Supervisor: Prof. Kin K. Leung
Apply ML optimization techniques (from trading bot experience) to resource allocation in distributed quantum systems. Develop noise-aware compilation strategies. Combine quantum computing knowledge with practical optimization skills.

6. Hardware acceleration for quantum circuit simulation
Supervisors: Prof. Wayne Luk + quantum faculty co-supervisor
Design FPGA or GPU accelerators for quantum circuit simulation. Use CUDA experience to optimize tensor network contractions. Bridge hardware design with quantum algorithm development.

Strategic application approach

Leveraging Imperial Physics MSci background:

Key advantages: Institutional familiarity, proven ability to meet Imperial standards, smooth transition narrative from Physics to Computing research, potential informal connections through Physics department.

What to emphasize:

- Physics degree demonstrates strong mathematical/analytical foundation
- Computational physics overlaps significantly with computing research
- Imperial understands interdisciplinary value (many successful Physics→Computing transitions)
- Physics+ML combination increasingly sought after for scientific computing

In research statement: Frame physics background as asset for computational research. Highlight projects combining physics methodology with computational/ML techniques (Higgs boson neural networks, computational physics coursework). Emphasize interdisciplinary approach—quantum computing, ML for science, computational methods all benefit from physics intuition.

Network leverage: Consider reaching out to Physics faculty who might know Computing faculty (particularly those in quantum research or computational physics). Prof. Oliver Buchmueller (Physics) works on quantum algorithms for high-energy physics and collaborates with Computing. Could provide informal introduction or insights.

Research statement strategy:

Core narrative: Physics training provides mathematical rigor and physical intuition, ML experience demonstrates practical implementation skills, computational expertise (JAX/CUDA speedups) shows performance optimization mindset. This combination uniquely positions the candidate for research at intersections: quantum computing (physics+computation), ML for science (ML+physics), computational methods (physics+optimization).

Structure:

1. **Motivation** (1 page): Why transition from Physics MSci to Computing PhD? Quantum computing represents convergence of physics, mathematics, and computer science. ML increasingly essential for scientific discovery.

Computational methods underpin modern physics research.
  2. **Research interests** (2-3 pages): Three balanced areas with specific questions:
       - Quantum computing (35%): Resource-efficient algorithms, quantum ML, error correction, many-body systems
       - Machine learning for science (30%): Physics-informed networks, surrogate models, optimization over trained models
       - Computational methods (35%): GPU acceleration, code generation, performance optimization
  3. **Methodology and background** (1-2 pages): Highlight specific technical skills (PyTorch, JAX, CUDA, XGBoost) with concrete achievements (115x speedup, crypto trading bot, Higgs measurement networks). Demonstrate research capability through KAUST internship and Master's project.
  4. **Why Imperial Computing**: Mention specific faculty and their work. Reference QuEST center, I-X initiative, strong HPC infrastructure. Emphasize collaborative culture between Computing, Physics, and Mathematics.

Timeline considerations: Jan 2026 vs Oct 2026

Recommendation: Target October 2026

January 2026 starts are exceptional cases requiring special arrangements with supervisor and PhD administrator. [University of York ↗](#) October is standard intake [Drkenyanwong ↗](#) with:

- Full cohort experience (start with 50-70 other students)
- Maximum funding opportunities
- Standard academic calendar alignment
- Established orientation and training programs

If January start is essential (e.g., gap concerns), must discuss during application process. [University of York ↗](#) However, waiting until Oct 2026 provides benefits:

- More time for application strengthening
- Better funding availability
- Larger peer cohort
- Supervisor preparation time

How to approach supervisors with tight deadline

Pre-application (next 48 hours):

DO NOT contact supervisors before applying per Imperial's unique protocol. [Imperial College London ↗](#) Focus entirely on completing formal application with strong research statement.

Post-application (after submission):

Wait 24-48 hours after submission, then send brief, professional email:

Email template:

Subject: PhD Application – [Your Name] – Imperial Physics MSci, Quantum Computing & ML

Dear Dr. [Bondesan/Tsay/etc.],

I have submitted my PhD application to Imperial Computing for October 2026 entry and listed you as a potential supervisor given the strong alignment between your research on [specific topic] and my interests.

As an Imperial Physics MSci graduate, I bring quantum mechanics, statistical physics, and QFT training combined with substantial ML implementation experience (PyTorch, JAX, XGBoost) and GPU acceleration skills (115x speedup achievement at KAUST using JAX/CUDA).

Your work on [specific recent paper or project] particularly resonates with my interest in [specific research direction]. My background in [relevant skills/projects] positions me to contribute to [specific aspect of their research].

I would welcome the opportunity to discuss potential research directions if you have capacity for new PhD students in 2026.

Best regards,
[Name]
Imperial College London, MSci Physics (Oct 2025)
[LinkedIn/website if relevant]

Key points:

- Keep under 200 words
- Reference specific recent work (shows genuine interest)
- Highlight unique value proposition (physics+ML+computational)
- Be professional, not desperate despite deadline pressure
- Attach CV if under 2 pages

Follow-up timing:

If no response after 1 week, send one brief follow-up. Academics receive many emails; persistence shows genuine interest but avoid being pushy.

Application checklist for deadline

Documents (prepare immediately):

✓ **CV** (2 pages maximum)

- Education: Imperial Physics MSci (graduating Oct 2025), relevant coursework
- Research: KAUST internship (highlight 115x speedup), Master's project (Higgs EFT)
- Skills: Python (NumPy, Pandas, JAX, PyTorch, XGBoost), CUDA, GPU acceleration, Git, Linux, LaTeX, MATLAB, C++, SQL
- Projects: Crypto trading bot (live ML system), equity factor engine, neural networks for particle physics
- Certificates: Quantitative Finance & Algorithmic Trading
- Publications/posters: if any from Master's project

✓ **Personal Statement** (1-2 pages)

- Motivation for PhD specifically in Computing (not just general PhD interest)
- Why Imperial Computing specifically (reference research strengths, faculty, facilities)
- Career aspirations (research scientist, academic, industry R&D)
- Relevant experience demonstrating research capability
- DO NOT include detailed research plans (goes in research statement)

✓ **Research Statement** (3-5 pages, merged with personal statement as single PDF) Must include:

- Broad research areas: quantum computing, ML for science, computational methods
- Specific research questions: e.g., "How can ML improve quantum error correction?", "Can physics-informed constraints improve ML surrogate models?", "What automatic optimization techniques can achieve JAX-like speedups more generally?"
- Methodology ideas: quantum circuit simulation, neural network architectures, GPU profiling and optimization
- Literature review: cite 10-15 key papers relevant to proposed areas
- Connection to background: explain how physics training + ML skills + computational expertise uniquely position you

✓ **Academic Transcripts**

- Physics MSci full transcript with individual module marks
- If results pending, provide interim transcript and expected degree classification

✓ **Two References**

- Ideally: Master's project supervisor (can speak to research capability) + one other academic (coursework, labs, or KAUST supervisor)
- Ensure referees are aware of urgent deadline
- Provide them with brief summary of your research interests to inform their letters

✓ **List of 3-4 Potential Supervisors** Based on research areas and fit:

- Quantum focus: Bondesan, Berta, Leung
- ML focus: Tsay, Misener, Bondesan
- Computational focus: Gorman, Kelly, Luk

Suggested combinations:

- **Balanced**: Bondesan, Tsay, Gorman, Berta
- **Quantum-focused**: Bondesan, Berta, Leung, Tsay
- **Computational-focused**: Gorman, Kelly, Tsay, Bondesan

Application process:

1. **Create account** at Imperial Graduate Admissions portal (imperial.ac.uk/study/apply/postgraduate-doctoral/)
2. **Select programme**: "Computing Research (PhD)" for general department (or "AI and Machine Learning" ONLY if applying specifically to AI4Health CDT) [Imperial College London](↗)
3. **Complete online form**: Education history, personal details, contact information
4. **Upload documents**: Single PDF combining personal + research statements, CV, transcripts
5. **Submit referee details**: They'll receive automated request
6. **List supervisors**: Enter 3-4 names with brief explanation of why each fits your interests
7. **Review and submit**: Double-check all sections before final submission

No application fee currently. [Imperial College London](↗)

Additional resources and contacts

Key contacts:

PhD Programme Administrator: Dr. Amani El-Kholy
a.o.el-kholy@imperial.ac.uk [Imperial College London](↗) [imperial](↗)

PhD Admissions Tutor: Dr. Giuliano Casale [Imperial College London](↗) [Imperial College London](↗)

General PhD enquiries: phdadmissions@doc.imperial.ac.uk

Teaching Scholarships: Dr. Mark Wheelhouse
mark.wheelhouse@imperial.ac.uk [Imperial College London](↗)

AI4Health CDT: ai4health-admissions@imperial.ac.uk

President's Scholarships: student.funding@imperial.ac.uk

Research centers:

Centre for Quantum Engineering, Science and Technology (QuEST) Multi-disciplinary quantum research spanning Physics, Computing, EEE, Mathematics. Three themes: Materials for Quantum Technologies, Quantum Internet, Applications for Quantum Computing. [Imperial College London](↗)

I-X Initiative (White City Campus) Imperial's flagship AI initiative bringing together 200+ researchers from 19 departments. [benmoseley](↗) I-X Centre for AI in Science offers fellowships for AI applied to scientific problems. Schmidt AI in Science Postdoctoral Fellowship program (Ben Moseley in Earth Science holds this).

EPSRC Distributed Quantum Computing Project £3M Imperial/UCL network focusing on scalable quantum computing through distributed architectures. Led by Prof. Kin Leung and Prof. Myungshik Kim. [Imperial College London ↗](#)

Software Performance Optimisation Group (Computing) Led by Paul Kelly. [ResearchGate +2 ↗](#) Collaborates on Firedrake and Devito projects for code generation and scientific computing optimization. [ResearchGate ↗](#)

Applied Modelling & Computation Group (AMCG) (Earth Science) Led by Gerard Gorman, Christopher Pain, Matthew Piggott. Focuses on computational modeling, numerical methods, HPC. [Imperial College London ↗](#) Dedicated GPU resources and HPC infrastructure. [Imperial College London ↗](#)

Doctoral Training Centres to consider:

CCMI CDT (Collaborative Computational Modelling at the Interface) UCL + Imperial partnership. Focus: computational mathematics, scientific algorithms, HPC, research software engineering. 4-year fully funded. [Imperial College London ↗](#) First intake September 2025. Imperial lead: Prof. Colin Cotter (Mathematics). [Imperial College London ↗](#) Website: ccmi-cdt.org

Excellent match for candidate's computational methods interest. HPC and scientific algorithms focus aligns with JAX/CUDA background.

StatML CDT (Modern Statistics and Statistical Machine Learning) Joint Imperial-Oxford. 4-year fully funded positions. [Imperial College London ↗](#) ~16 studentships per year. Led by Prof. Axel Gandy (Mathematics). [Google Groups ↗](#) Perfect for ML + computational methods.

Physics department connections:

If considering interdisciplinary supervision:

Prof. Oliver Buchmueller (Physics): Quantum algorithms for high-energy physics
Prof. Myungshik Kim (Physics): Distributed quantum computing, quantum information theory
Prof. Ian Walmsley CBE FRS (Provost, Physics background): Photonic quantum computing [Dqc-app ↗](#)

These Physics faculty collaborate with Computing and could enable joint supervision leveraging both quantum physics depth and computing methodology.

Final recommendations summary

Immediate priorities (next 48 hours):

1. **Submit formal application** through Imperial portal before deadline
2. **List these 4 supervisors**: Bondesan (primary quantum+ML), Tsay (advertised position), Gorman (computational methods), Kelly or Berta (alternative)
3. **Strong research statement** emphasizing physics+ML+computational unique combination
4. **Secure references** with urgent notification to referees

Top 3 supervisor targets post-submission:

1. Dr. Roberto Bondesan – Most aligned research, perfect physics+ML+quantum intersection, actively building research group

2. Dr. Calvin Tsay – Currently has advertised funded position, optimization+ML matches candidate skills, strong funding track record

3. Prof. Gerard Gorman – Same career trajectory (physics→computing), JAX/CUDA expertise directly applicable to Devito project, strong computational focus

Funding strategy:

Apply for multiple schemes simultaneously:

- Automatic EPSRC DTP consideration (if eligible)
- Request department consideration for President's Scholarship nomination
- Express interest in Teaching Scholarship (contact Mark Wheelhouse after acceptance)
- Note interest in any supervisor-specific funding

Competitive advantages to emphasize:

Unique skill combination: Few candidates have quantum mechanics + statistical physics + production ML + GPU optimization. This interdisciplinary profile is highly valuable.

Proven research capability: KAUST internship (115x speedup), Master's project, live trading system demonstrate not just coursework but actual research contribution.

Imperial familiarity: As MSci graduate, understand institution's standards and culture. Smooth transition from Physics to Computing.

Immediate contribution: Not starting from scratch—already have JAX, PyTorch, CUDA skills. Can begin contributing to research projects immediately.

Key success factors:

The candidate has **exceptional qualifications** for Imperial Computing PhD positions. Physics background provides mathematical rigor, ML experience demonstrates practical skills, GPU optimization shows performance mindset. Imperial College London ↗ The challenge is the tight deadline—but Imperial's rolling admissions Imperial College London ↗ and December funding deadline Imperial College London ↗ mean immediate application can still secure excellent positions.

Focus on communicating the **unique value proposition**: this candidate can bridge quantum physics theory, machine learning implementation, and high-performance computing optimization. That combination is rare and increasingly essential for cutting-edge research at intersections of physics, AI, and computation.

With strong application materials, strategic supervisor selection, and prompt follow-up, this candidate has excellent prospects for funded PhD position at one of the world's top computing departments.