

Chun Yui (Nicholas) Wong

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Links: [Google Scholar](#), [ResearchGate](#)

Education

- **2021 (expected):** PhD, Computational Design, University of Cambridge
Supervisor: Dr. Geoffrey T. Parks, Dr. Pranay Seshadri
 - Project title: *Dimension Reduction Ideas for Scalable and Efficient Robust Design Paradigms in Turbomachinery*
- **2018:** B.A./M.Eng (Hons.), Information and Computer Engineering, University of Cambridge
 - Class I, within 3rd percentile of year group of 300 for part IA, IB and IIA.
 - Final Year Project: *Polynomial Approximations and Sensitivity Analysis via Compressed Sensing*

Scholarships and Awards

- **2018:** Cambridge Trusts Scholarship
- **2018:** Lloyds Register Foundation Award (via the Alan Turing Institute)
- **2018:** Hogwood Scholarship, Jesus College, Cambridge
- **2018:** Funding from Rolls Royce plc.
- **2018:** Kelly Prize for the Engineering Tripos
- **2017:** College Prize and Scholarship for Part IIA Engineering
- **2016:** Benefactor's and Engineers' Prize for Part IB Engineering
- **2015:** Evans Prize and Scholarship for Part IA Engineering
- **2014:** Silver award at the 45th International Physics Olympiad
- **2014:** Honourable mention at the 14th Asian Physics Olympiad Olympiad
- **2011:** Silver award at the 8th International Junior Science Olympiad

First Authored Publications and Presentations

- **Wong, C. Y.**, Seshadri, P., Parks, G. T., Girolami, M., Embedded Ridge Approximations. *Computer Methods in Applied Mechanics and Engineering* 372 (2020) 113383 [Paper](#) [Preprint](#).
 - Poster presented at FrontUQ workshop in Pisa, Italy.
 - Contributed lecture accepted at SIAM UQ20 conference in Munich, Germany. (Canceled due to pandemic)
- **Wong, C. Y.**, Seshadri, P., Parks, G. T., (2021) Extremum sensitivity analysis with polynomial Monte Carlo filtering. *Reliability Engineering and Systems Safety* 212 (2021) 107609. [Paper](#) [Preprint](#).
- **Wong, C. Y.**, Seshadri, P., Parks, G. T., Blade Envelopes [Preprint Part I](#) [Preprint Part II](#)
- **Wong, C. Y.**, Seshadri, P., Parks, G. T., Automatic Borescope Damage Assessments for Gas Turbine Blades via Deep Learning [Conference paper](#) [Preprint](#)
 - Presented at AIAA SciTech Forum and Exposition 2021.

Work Experience

- **2017-Present:** Developer at [Effective Quadratures](#)
 - Giving regular workshop tutorials exposing the capabilities related to supervised machine learning using the code. Locations include:
 - * Rolls Royce plc. Derby, U.K.
 - * UK Atomic Energy Authority, Culham, U.K.
 - Coded up routines for least-squares regression and compressed sensing recovery of orthogonal polynomial approximation models.
 - Coded up routines for subspace-based dimension reduction.
 - Developing unit tests for numerical methods.
- **Summer 2020:** Mentor for Google Summer of Code at *NumFocus*
 - Project: Orthogonal polynomial regression trees in Effective Quadratures
- **2018:** Cambridge Mathematics Placement at the Department of Biochemistry, University of Cambridge
 - Developed techniques related to ℓ_1 minimization to recover NMR scan data from incomplete time-domain samples.
- **2017:** Undergraduate research project at Machine Intelligence Lab, Department of Engineering, Cambridge
 - Designed Python user interface for C++ library for label propagation in computer vision.

- Improved functionality of library to handle wider range of image sequences more quickly.
- **2016:** Software engineering internship at ASM Pacific Technology, Hong Kong
 - Implemented unit tests for existing library functions for actuating an ultrasonic transducer.
 - Improved GUI for mobilizing the library with usability tests.
 - Developed new interface for monitoring I/O ports with C# and XAML in Visual Studio.
- **2015:** Undergraduate research project at Centre of Smart Infrastructure, CUED
 - Coded AVR controller for collecting data using a tilt sensor.

Teaching

- 2P7 Vector Calculus: Michaelmas 2019
- 3M1 Mathematical Methods: Lent 2020, Lent 2019
- 1P4 Mechanical Vibrations: Easter 2019

Extra-curricular Activities

- **2015-16:** President/Director of Cambridge University Chinese Orchestra Society
 - Responsible for overseeing the operation of the orchestra, including managing rehearsals, performances, sponsorship and promotions.
 - Hosting annual concert attended by around 150 people.
- **2014:** Editor for 64th annual mathematical magazine Eureka for the Archimedean society at Cambridge
 - Editing technical articles using Adobe InDesign.
- **2012-13:** Instructor and leader of school physics Olympiad team

Skills and Languages

- **Computer Programming:** Python, C++, C, MATLAB, C#/XAML. Basic Linux skills.
- **Languages:** Native Cantonese/Mandarin Chinese. Fluent English. Elementary Japanese.