JAKE HORSFIELD, PHD

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Self-driven and ambitious problem-solver with a strong research background in mathematics and computer science, and a passion for combining rigor and logic with creativity.

EMPLOYMENT

2022 – Present **Patent Attorney (Part Qualified)**, *Kilburn & Strode LLP*, London, UK
Drafting and prosecuting patent applications for inventions involving algorithms, computer software and hardware, semiconductors, telecommunications, and automotive and aerospace technologies. Fast-paced, deadline-driven work for high tech clients.

2019 – 2022 **Teaching Assistant**, *School of Computing, University of Leeds*, UK
Designed and delivered mathematics and computer science tutorials for groups of up to 80 undergraduate and Master's-level students, alongside doctoral research.

Summer 2016 **Summer Intern**, *School of Computing, University of Leeds*, UK
Created software for efficiently generating, storing, and visualising fibre networks. This software was later used in research into fibrous materials.

STRENGTHS

Programming Python, C, C++ and Java. Algorithms and data structures.

Writing Author of five articles that have been or are soon to be published in strong academic journals. Diligent attention to detail, excellent command of the English language, and a clear, concise and accurate communicator.

Speaking Presented research at Durham University, the Serbian Academy of Science and Arts, and the University of Leeds. Enthusiastic and confident speaker, skilled at articulating complex technical concepts in a clear manner to a range of audiences.

Organisation Experienced working both autonomously and as part of a team to manage and meet critical deadlines, ensuring excellent client service in a fast-paced working environment.

EDUCATION

2023 – 2024 **Intellectual Property Law PGCert**, *Queen Mary University of London*, UK
Studied UK, European and International patent, trademark, copyright and designs law.

2018 – 2022 **PhD Computer Science**, *University of Leeds*, UK
Investigated the structure of mathematical networks to obtain efficient algorithms for computationally hard optimization problems. Published in reputable academic journals.

2015 – 2018 **BSc Computer Science**, *University of Leeds*, UK
Achieved first-class honours. Awarded the highest-marked undergraduate dissertation.

PUBLICATIONS

2023 **Claw-free β-perfect graphs**, with K. Vušković.
To appear in *Discrete Mathematics*.

2023 **Graphs with all holes the same length**, with L. Cook, M. Preissmann, C. Robin, P. Seymour, N.L.D. Sintiari, N. Trotignon and K. Vušković
To appear in *Journal of Combinatorial Theory, Series B*.

2021 **Bounding the mim-width of hereditary graph classes,** with N. Brettell, A. Munaro, G. Paesani and D. Paulusma.
Journal of Graph Theory.

2021 **List k-colouring P_t-free graphs: a mim-width perspective**, with N. Brettell and D. Paulusma.
Information Processing Letters.

2021 **Two classes of β-perfect graphs without simplicial extremes**, with K. Vušković.
Discrete Mathematics.

Research Trips, Conferences and Workshops

2022 **Wilfred Laurier University**, Canada. *Research trip*.
2020 **Durham University**, UK. *Research trip*.
2019 **École normale supérieure de Lyon**, France. *Research trip.*
Bordeaux University, France. *Workshop on graph theory and optimization*.
Warwick University, UK. *Workshop on algorithms and complexity*.
Oxford University, UK. *Conference on combinatorics and discrete mathematics*.
Serbian Academy of Sciences and Arts, Serbia. *Workshop on graph algorithms.*