Craig Fouts

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I'm an enthusiastic **scientist/engineer** interested in building data-driven mechanistic models of living systems and exploring the dynamics of emergent behavior in host-microbiome ecosystems.

EDUCATION

Imperial College London | **PhD**
Computational Systems Biology **2025 – 2029**

Columbia University | **MSc**
Applied Mathematics **2022 – 2023**

The Ohio State University | **BSc**
Computer Science & Engineering **2018 – 2022**

The Ohio State University | **BSc**
Mathematics (double major) **2018 – 2022**

EXPERIENCE

Uppsala University | Vicković Group, Science for Life Laboratory

Computational Research Engineer **Oct 2024 – Sep 2025**

Developed a nonparametric neural topic model called ATLAS that elucidates anatomical structures and pathological motifs in single-cell datasets based on expression profile and spatial distribution.

New York Genome Center | Technology Innovation Laboratory

Associate Computational Biologist II **Jan 2024 – Sep 2024**
Graduate Research Assistant **Sep 2022 – Jan 2023**

Developed a probabilistic dimension reduction framework called sceLDA that clusters anatomical structures in histological spinal cord datasets based on cell composition and spatial distribution.

The Ohio State University | Translational Data Analytics Institute

Undergraduate Research Assistant **Aug 2021 – Sep 2022**

Developed a computational pipeline for aggregating and analyzing multimodal data collected from environmental sensors used to characterize the effects of aircraft engines in urban neighborhoods.

ACCOLADES

Honors

The Ohio State University: Magna Cum Laude | Honors Research Distinction **2022**
Granville High School: Cum Laude Society | National Honor Society | Sociedad Honoraria Hispánica **2017**
Scouting America: Eagle Scout **2016**

Competitions

HackOHI/O Hackathon: 1st Place Grand Prize | Microsoft Challenge Winner | People's Choice Award **2021**
Ohio State FEH Honors Robotics Competition: 2nd Place Outstanding Achievement in Innovation **2019**
OMEA Solo & Ensemble: Rank 1 Class A Violin Solo Performance **2016** & **2017**

COURSEWORK

Columbia University

Applied Statistics III (A), Machine Learning for Functional Genomics (A), Advanced Linear Algebra (A+) **2023**
Numerical Algebra & Optimization (A), Partial Differential Equations (A-) **2022**

The Ohio State University

Discrete Mathematical Models (A), Quantitative Neuroscience (A), Computer Networking (A) **2022**
Mathematical Statistics II (A), Advanced Artificial Intelligence (A), Programming Languages (A) **2021**
Data Structures & Algorithms (A), Experimental Physics (A), Intermediate Mechanics (A-) **2020**
Ordinary Differential Equations (A), Honors Physics Electricity & Magnetism (A) **2019**
Honors Real Analysis (A), Honors Psychology (A) **2018**

PUBLICATIONS

Growing Steerable Neural Cellular Automata

Ettore Randazzo, Alexander Mordvintsev, & **Craig Fouts** (24 – 28 July 2023). *Growing Steerable Neural Cellular Automata*. Proceedings of ALIFE 2023 (pp. 4 – 10). https://doi.org/10.1162/isal_a_00564

Growing Isotropic Neural Cellular Automata

Alexander Mordvintsev, Ettore Randazzo, & **Craig Fouts** (18 – 22 July 2022). *Growing Isotropic Neural Cellular Automata*. Proceedings of ALIFE 2022 (pp. 65 – 72). https://doi.org/10.1162/isal_a_00552