

# Craig Fouts

CRAIGFOUTS.COM  
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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 interactions.

## EDUCATION

<b>Imperial College London   PhD</b> Computational Systems Biology	<b>2025 – 2029</b>	<b>Columbia University   MSc</b> Applied Mathematics	<b>2022 – 2023</b>
<b>The Ohio State University   BSc</b> Computer Science & Engineering	<b>2018 – 2022</b>	<b>The Ohio State University   BSc</b> Mathematics (double major)	<b>2018 – 2022</b>

## 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

**HackOHIO 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**

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## COURSEWORK

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### 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**

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## PUBLICATIONS

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### 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](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](https://doi.org/10.1162/isal_a_00552)