

MITCHELL JONES, PH.D.

Software engineer and computational geometer

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SUMMARY

A Ph.D. in theoretical computer science with extensive experience in developing efficient algorithms for problems in computational geometry and combinatorial optimization. Eager to use his theoretical knowledge and previous technical experience to solve a variety of algorithmic challenges in industry.

EDUCATION

Ph.D. in Computer Science

University of Illinois at Urbana-Champaign

📅 Aug 2016 – July 2021

- Research interests: computational geometry, randomized & approximation algorithms, combinatorial optimization
- Thesis: On the Search for Geometric Orders, Centers, and Separation
- Advisor: [Sariel Har-Peled](#)

Bachelor of Computer Science and Technology (Advanced)

University of Sydney

📅 Feb 2012 – Nov 2015

- Graduated with Honors Class I and the University Medal
- Advisor: [Julián Mestre](#)
- Thesis: The Maximum Facility Location Problem

SKILLS

Primary programming languages

C++

Python

LaTeX

See [this GitHub repository](#) for examples of some algorithms and common data structures implemented in Java and C++.

Secondary skills

Java

CGAL (CG algorithms library)

Git

HTML/CSS

Javascript

SQL

Previously used

PHP

C

C#

Objective-C

Previous experience with many other web technologies, including Django, MongoDB, Neo4j, jQuery, and Bootstrap.

EXPERIENCE

Software engineer (planning)

Nuro

📅 Aug 2021 – Present

📍 Mountain View, CA, USA

- Working with the behavioral and planning team

Research and teaching assistant

University of Illinois at Urbana-Champaign

📅 Aug 2016 – Jul 2021

📍 Champaign, IL, USA

- Worked with [Sariel Har-Peled](#) as a research assistant
- Developed randomized and approximation algorithms for various problems in computational geometry (see selected publications)
- Teaching assistant for graduate and undergraduate algorithms classes (included weekly labs, grading, and office hours)

Research and teaching assistant

University of Sydney

📅 Jul 2013 – Jun 2016

📍 Sydney, Australia

- Worked with [Julián Mestre](#) as a research assistant
- Developed new algorithms for computing [treewidth](#) of a graph—led to a paper in *Algorithmica* [[GGJ+19](#)]

Software engineering intern

Google

📅 Nov 2015 – Feb 2016

📍 Sydney, Australia

- Worked with the social & discovery team
- Built internal tools
- Required Java and Javascript

Software engineering intern

Google

📅 Nov 2014 – Feb 2015

📍 Sydney, Australia

- Worked with the Google Chrome team
- Developed [hosted apps](#) for Mac
- Required C++ and Objective-C

OUTREACH

CS Grad Ambassador

📅 2017 – 2020 📍 Champaign, IL, USA

- Ambassador connects with incoming graduate students
- Meet on visit days to answer questions they have about the grad program or life at UIUC

Zero Robotics Mentor

📅 2015 – 2016 📍 Sydney, Australia

- Mentor for the [Zero Robotics](#) for two years when it was piloted in Australia
- Each mentor is assigned a team of students from a high school, where they compete in an international programming challenge

NCSS Challenge tutor

📅 2012 – 2015 📍 Sydney, Australia

- Yearly online Python programming competition for high school students
- Regularly helped students with the programming tasks via an online forum

NCSS Summer school tutor

📅 2014 📍 Sydney, Australia

- Programming tutor for a ten day summer school, which brings together students in grades 11 and 12
- Ran labs on teaching Python, HTML, CSS, JavaScript, and SQL

SELECTED PUBLICATIONS

See full list of publications on [Google Scholar](#).

👥 Conference Proceedings

- [HJ21b] S. Har-Peled and M. Jones. *Stabbing convex bodies with lines and flats*. *Symposium on Computational Geometry (SoCG 2021)*, to appear.
- [HJ20a] S. Har-Peled and M. Jones. *Fast algorithms for geometric consensuses*. *Symposium on Computational Geometry (SoCG 2020)*, 50:1–50:16, 2020.

📄 Journal Articles

- [HJ21a] S. Har-Peled and M. Jones. *Journey to the Center of the Point Set*. *ACM Transactions on Algorithms*, 17(1), 2021. Originally appeared in SoCG 2019.
- [HJR21] S. Har-Peled, M. Jones, and S. Rahul. *Active-learning a convex body in low dimensions*. *Algorithmica*: 1–33, 2021. Originally appeared in ICALP 2020.
- [CHJ20] T. M. Chan, S. Har-Peled, and M. Jones. *On locality-sensitive orderings and their applications*. *SIAM Journal on Computing*, 49(3): 583–600, 2020. Originally appeared in ITCS 2019.
- [HJ20b] S. Har-Peled and M. Jones. *On separating points by lines*. *Discrete & Computational Geometry*, 63(3): 705–730, 2020. Originally appeared in SODA 2018.
- [GGJ+19] S. Gaspers, J. Gudmundsson, M. Jones, J. Mestre, and S. Rümmele. *Turbocharging treewidth heuristics*. *Algorithmica*, 81(2): 439–475, 2019. Originally appeared in IPEC 2016.

ACHIEVEMENTS & AWARDS

2019

- Mavis Future Faculty Fellow award (MF3)
- Ranked as [excellent teacher by students](#) for the largest undergraduate algorithms class at UIUC (CS374; list compiled by the [University of Illinois Center for Innovation in Teaching & Learning](#))

2015

- The Allan Bromley Prize for best honours thesis

2013

- HEDLOC Undergraduate Prize for Algorithms

2013 – 2015 (awarded annually)

- University of Sydney Academic Merit Prize
- Dean's List of Excellence in Academic Performance
- University of Sydney, School of IT's High Honour Roll