

Samuel E. Reynolds

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Education

Portland State University <i>Ph.D. in Mathematical Sciences</i>	Portland, Oregon, USA <i>June 2024</i>
Portland State University <i>M.S. in Mathematics</i>	Portland, Oregon, USA <i>April 2020</i>
Portland State University <i>B.S. in Mathematics, Magna cum laude, Departmental honors</i>	Portland, Oregon, USA <i>August 2017</i>

Research Interests

My primary research focus is numerical methods for partial differential equations. Specifically, I am working on a finite element method using nonstandard meshes incorporating cells with curved edges and holes, using ideas from virtual element methods and boundary element methods. I also have experience in numerical optimization and high performance computing.

Positions

Research positions.....

Fariborz Maseeh Dept. of Math. & Stats., PSU <i>Research assistant</i> Advisor: Jeffrey Ovall	Portland, Oregon <i>2016–2024</i>
Lawrence Livermore National Laboratory <i>Computing scholar, summer internship</i> Mentor: Julian Andej	Livermore, California <i>2022</i>
Argonne National Laboratory <i>Givens associate, summer internship</i> Mentor: Richard Tran Mills	Chicago, Illinois <i>2021</i>

Education positions.....

Fariborz Maseeh Dept. of Math. & Stats., PSU <i>Graduate teaching assistant</i> Supervisor: Andy Flight	Portland, Oregon <i>2019–2020</i>
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Computing Skills

Python, MATLAB, C, C++, Wolfram Mathematica, MS Excel, \LaTeX , git, Linux, MacOS, MS Windows

Awards and Honors

NSF Research Training Group Graduate Fellowship (2022–2024): National Science Foundation

Excellence in Remote Teaching Award (2020): Fariborz Maseeh Dept. of Math. & Stats., PSU

Level III (Master) Tutor Certification (2019): College Reading & Learning Association

F. S. Cater Prize (2019): Fariborz Maseeh Dept. of Math. & Stats., PSU

Christine and David Vernier STEM Scholarship (2016): PSU College of Liberal Arts and Sciences

Oregon NASA Space Scholarship (2015): Oregon Space Grant Consortium

Publications

- [1] Jeffrey S. Owall and Samuel E. Reynolds. “Evaluation of Inner Products of Implicitly Defined Finite Element Functions on Multiply Connected Planar Mesh Cells”. *SIAM Journal on Scientific Computing* 46.1 (2024), A338–A359.
- [2] Jeffrey S. Owall and Samuel E. Reynolds. “Quadrature for implicitly-defined finite element functions on curvilinear polygons”. *Computers & Mathematics with Applications* 107 (2022), pp. 1–16.
- [3] Akash Anand et al. “Trefftz finite elements on curvilinear polygons”. *SIAM Journal on Scientific Computing* 42.2 (2020), A1289–A1316.
- [4] Nguyen Mau Nam et al. “Clustering and multifacility location with constraints via distance function penalty methods and dc programming”. *Optimization* 67.11 (2018), pp. 1869–1894.
- [5] Nguyen Mau Nam et al. “Nesterov’s smoothing technique and minimizing differences of convex functions for hierarchical clustering”. *Optimization Letters* 12 (2018), pp. 455–473.
- [6] Jeffrey S. Owall and Samuel E. Reynolds. “A high-order method for evaluating derivatives of harmonic functions in planar domains”. *SIAM Journal on Scientific Computing* 40.3 (2018), A1915–A1935.

Further Information

Also known as: Sam Reynolds

Pronouns: he/him/his

Country of citizenship: United States of America