Maxie Dion Schmidt

Mailing Address:
251 Tenth Street NW, C101
Atlanta, GA 30318

Permanent Address:
4015 Landfall Drive
Pensacola, FL 32507

☎ *(636) 751-4916*
✉ maxieds@gmail.com
✉ mschmidt34@gatech.edu

October 27, 2021

To whom it may concern,

I am applying for a postdoctoral fellowship in the mathematics department to begin next year after I graduate with my Ph.D. in mathematics from the Georgia Institute of Technology in 2022. I am applying for this position per your job listing on *Math Jobs*. My doctoral thesis committee is headed by Professors Michael Lacey and Josephine Yu with Matt Baker, Jayadev Athreya at the University of Washington, and Bruce Berndt at the University of Illinois at Urbana-Champaign. The basis for the work in my dissertation summarizes and extends work of mine published over the last few years in the *Ramanujan Journal*, *Acta Arithmetica* and the *American Mathematical Monthly*. This work connects functions from multiplicative number theory with the theory of partitions. I feel that a position at your university is a good fit for both myself and the established faculty working in number theory, combinatorics and experimental mathematics. My background and experience in open source software, symbolic computation and experimental mathematics will also add breadth to the faculty at your institution that sets my goals and career trajectory apart from other distinguished applicants.

My research combines number theory, combinatorics and software development. More broadly, I have interests in studying combinatorial and analytic number theory, in applied cryptography and embedded computer hardware, and in software engineering. My active peer-reviewed publication list is diverse with now over twenty entries, as is my public profile of open source software projects, each of which reflect the breadth and depth of my combined research areas. I am always open to exploring challenging and interesting new problems in mathematics and software engineering. I have been funded as a graduate research assistant for the last three years or so developing open source software in applied mathematical biology at GA Tech that has led to a recent publication in *Bioinformatics* in 2021. My recent work in analytic number theory characterizes the partial sums of the Möbius function. The manuscript showcases new connections to strongly additive functions and the summatory functions of key unsigned sequences whose distributions are given by an Erdős-Kac theorem type variant tending to non-central normal for large x. The manuscript is accepted this year for my second publication in the *Journal of Number Theory* since entering graduate school. In January of 2022, I am giving an invited talk at the special session in early career number theory at the AMS Joint Mathematics Meetings in Seattle about this new work of mine in analytic number theory.

I look forward to hearing more from you about math and the academic positions at your university. I

am available for meetings over the phone and by video conferencing through my email addresses listed at the top of this letter. I have enclosed my application materials on *Math Jobs* including a copy of my CV and a detailed combined research and teaching philosophy statement. I have provided the names of five reference writers that know me and my work well below. Thank you very much for taking the time to talk with me and for your encouragement via the funding opportunity this year.

Sincerely,

Maxie Dion Schmidt

Enclosure: *Curriculum Vitae; Research Statement; Publications List; Diversity and Teaching Statement.*
Letters of Reference: *Bruce Reznick*, `reznick@illinois.edu`*; Jayadev Athreya*, `jathreya@uw.edu`*; Christine Heitsch*, `heitsch@math.gatech.edu`*; Ernie Croot*, `ecroot@math.gatech.edu`*; Klara Grodzinsky*, `klarag@math.gatech.edu` *(letter concerns my teaching experience).*