Rebecca M. Bellovin

Curriculum vitae

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Citizenship: United States, United Kingdom

I am a software engineer currently working on distributed systems, primarily in javascript. I also have a strong academic background, including experience as a postdoctoral researcher in mathematics, and a longstanding interest in cryptography and security. I am seeking a research-oriented position where I can apply my analytical skills in a collaborative environment.

Employment

2019–	**Distributed Systems Engineer**, *Ably Realtime*
2018–2019	**Research associate**, *Imperial College London* EPSRC postdoc
2015–2018	**Junior Research Fellow**, *Imperial College London*
2014–2015	**NSF postdoctoral fellow**, *University of California, Berkeley* MSPRF Award Number 1401640
2013–2014	**Research associate**, *Imperial College London* ERC postdoc

Education

2013	**Ph.D.**, *Stanford University* Department of Mathematics Advisor: Brian Conrad Thesis: p-adic Hodge theory in rigid analytic families
2008	**B.A.**, *Columbia University* Summa cum laude, with honors in mathematics

Skills and Experience

Software engineering
- Currently employed as a distributed systems engineer, working on a realtime messaging platform written in javascript
- Wrote a quality-of-service monitor for Ably, including analyzing and adjusting our statistics collection

Other programming experience
- C: Undergraduate Operating Systems course; assignments were in C and involved modifying the Linux kernel (A grade)
- Go: Designed and implemented a certificate transparency log monitor, exporting results and metrics to sqlite3 and prometheus

Computer science coursework
- Formal Reasoning About Programs 6.822 (currently auditing; problem sets in coq)
- Introduction to Cryptography (Spring 2007; A grade)
- Spoke on "Lattice problems in NP intersect coNP" (Aharonov–Regev) in Dan Boneh's lattices seminar (Autumn 2009)

Research	○ Designed and carried out long-term research projects in p-adic Hodge theory. Published 5 papers in leading journals and conference proceedings, including *International Mathematical Research Notices*.
	○ Took interdisciplinary approach to research, resulting in papers applying p-adic Hodge theory to other fields, including solving problems in Iwasawa theory and modularity lifting
	○ Awarded National Science Foundation Mathematical Sciences Postdoctoral Research Fellowship and Imperial College Research Fellowship
Collaboration	○ Co-organized research seminars, study groups, and conferences, including co-writing grant application and selecting participants for the workshop Modularity and Moduli Spaces (Casa Matematica Oaxaca, October 2019)
	○ Served on the Ph.D. admissions commitee for the London School of Geometry and Number Theory, focusing on diversity and inclusion
	○ Collaborated with colleagues on projects, resulting in papers published in leading journals such as *Algebra & Number Theory*
Management	○ Selected researchers to speak in the weekly London Number Theory Seminar (Autumn 2016)
	○ Co-wrote syllabus and selected speakers for the London Number Theory Study Group (Spring 2014) and the Oberwolfact workshop (October 2016) on perfectoid spaces
Communication	○ Presented 18 invited research seminar talks and 4 invited conference talks
	○ Designed and delivered lectures, problem sets, tests, and exams to third- and fourth-year undergraduates at Imperial College for Group Representation Theory (Spring 2017)
	○ Spoke to undergraduates on "Public-key cryptography, blind signatures, and digital cash" (`https://rmbellovin.github.io/writings/chaum.pdf` and "Cracking the Enigma"(`https://rmbellovin.github.io/writings/enigma.pdf`)

Preprints and Publications

[1] R. Bellovin. "Cohomology of (φ, Γ)-modules over pseudorigid spaces". In: *International Mathematics Research Notices* (May 2023). ISSN: 1073-7928. DOI: `10.1093/imrn/rnad093`.

[2] R. Bellovin. "Galois representations over pseudorigid spaces". In: *J. de Théor. Nombres Bordeaux* 35.1 (2023), pp. 283–334. DOI: `10.5802/jtnb.1246`.

[3] R. Bellovin. "Modularity of trianguline representations". Submitted. 2021. URL: `https://arxiv.org/abs/2108.02823`.

[4] R. Bellovin and T. Gee. "G-valued local deformation rings and global lifts". In: *Algebra Number Theory* 13.2 (2019), pp. 333–378. ISSN: 1937-0652. DOI: `10.2140/ant.2019.13.333`.

[5] R. Bellovin and O. Venjakob. "Wach modules, regulator maps, and ε-isomorphisms in families". In: *Int. Math. Res. Not.* 16 (2019), pp. 5127–5204. ISSN: 1073-7928. DOI: `10.1093/imrn/rnx276`.

[6] R. Bellovin. "Generic smoothness for G-valued potentially semi-stable deformation rings". In: *Ann. Inst. Fourier (Grenoble)* 66.6 (2016), pp. 2565–2620. ISSN: 0373-0956.

[7] R. Bellovin. "p-adic Hodge theory in rigid analytic families". In: *Algebra Number Theory* 9.2 (2015), pp. 371–433. ISSN: 1937-0652. DOI: `10.2140/ant.2015.9.371`.

[8] R. Bellovin et al. "Newton polygons for a variant of the Kloosterman family". In: *Women in Numbers 2: Research Directions in Number Theory*. Vol. 606. Contemp. Math. Amer. Math. Soc., Providence, RI, 2013, pp. 47–63. DOI: `10.1090/conm/606/12139`.