

**Brian MacKie-Mason <brimacki@unm.edu>**  
brianmackiemason.com

---

**EDUCATION**

---

**PhD Pre-Candidate Electrical Engineering** *Expected 2017*  
**University of New Mexico**  
**Advisor: Professor Zhen Peng**

**MS Nuclear Engineering** *2013*  
**University of Wisconsin-Madison**

**BSE Nuclear Engineering** *2011*  
**University of Michigan**

---

**TECHNICAL SKILLS**

---

- Algorithm Development, Parallel Computing, Electromagnetic Analysis, MPI, OpenMP, Domain Decomposition Methods, Surface Integral Equation Methods, College Instruction, Scientific Computing
- Languages: C++, MATLAB, Bash shell, Python, C
- Software Packages: ViSiT, CUBIT, KDevelop, SolidWorks (CAD), Improved Concurrent Electromagnetic Particle-in-Cell (ICEPIC)

---

**PROFESSIONAL EXPERIENCE**

---

**Department of Electrical Engineering, University of New Mexico** *August 2013 - Present*  
**Prof. Zhen Peng**

**Graduate Research Assistant, Computational Electromagnetics**

- Researched and developed a geometry-aware domain decomposition (GA-IE-DDM) method for the integral solution to extreme-scale, multi-scale electromagnetics problems.
- Developed tools to automatically partition mesh files for GA-IE-DDM utilizing a k-way graph partitioning code and creating a global-to-local mapping scheme.
- Parallelized GA-IE-DDM in an MPI architecture with C++ for a scalable solution method to the Electric Field Integral Equation.

**Air Force Research Lab, Kirtland AFB**

*Summers 2011-13*

**Drs. Wilkin Tang, Nathaniel Lockwood & Andrew Greenwood**

**Graduate Research Assistant, Computational Electromagnetics**

- Studied the effects of laser-induced field emission (2013).
- Designed diagnostics to improve the study of field emission (2012).
- Designed validation and verification test suite for ICEPIC (2011).
- Security clearance expiring 2022.

---

**AWARDS & HONORS**

---

- ECE GSA Student Paper Competition – Journal Paper Section, 3rd prize, April 2016.
- Eagle Scout, February 2007

---

**OTHER EXPERIENCE**

---

**UNM GPSA** *Fall 2015 - Present*

- Department of ECE Delegate (August 2015 - May 2016, August 2016 - Present)
- GPSA Finance Committee Member (August 2016 - Present)
- GPSA Representative to Information Technology Committee (August 2015 - May 2016)
- Legislative Steering Committee Member-at-large (February 2016 - May 2016)

**ECE Graduate Student Association**

*Fall 2015 - Present*

- ECE GSA Vice-President (June 2016 - Present)