# Mathias A. Gibbens, KØWBG


**Contact Information**

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## Professional Experience

**Sandia National Laboratories**, Albuquerque, New Mexico, USA

*Software Engineer* — **January 2017 to Present**

**University of Arizona Department of Computer Science**, Tucson, Arizona, USA

*Graduate Research Assistant* — **January 2012 to December 2016**

- Graduate research assistant for Dr. Chris Gniady and Dr. Beichuan Zhang

*Graduate Student Council Co-Chair* — **August 2012 to July 2013**

*Graduate Teaching Assistant* — **Fall 2011 & Fall 2016**

- CSC352 *Unix and C Programming*
- CSC345 *Analysis of Discrete Structures*

**Bethel University Web Services**, Saint Paul, Minnesota USA

*Lead Student Developer* — **August 2008 to July 2011**

- Developed, integrated, and maintained internal and external web applications
- Extensive development experience with the Python Zope2 framework and Silva CMS
- Worked closely with other developers and built strong professional relationships

## Education

**The University of Arizona**, Tucson, Arizona USA

M.S., Computer Science, December 2014

- *Summa Cum Laude*
- Recipient of the University of Arizona Graduate College Fellowship

**Bethel University**, Saint Paul, Minnesota USA

B.S., Computer Science, May 2011

- *Cum Laude*
- Strong minor in Mathematics
- Participant in Bethel University's Honors Program
- Recipient of Bethel President's and Tozer Foundation academic scholarships

## Papers and Presentations

- Gibbens, M., Gniady, C., & Zhang, B. (2015). Towards Eco-Friendly Home Networking. In *Sustainable Computing: Informatics and Systems*.
- Gibbens, M., Gniady, C., & Zhang, B. (2014, November). Towards Eco-Friendly Home Networking. In *Green Computing Conference (IGCC), 2014 International*. IEEE.

## Selected Academic Projects

- Hadoop over Named Data Networking (NDN). Replaced entire IP stack in Apache Hadoop with NDN protocol to improve reliability and reduce network congestion.
- Log-Based File System. Implemented a log-based file system, from the block level up to a POSIX-compliant interface via FUSE in the Linux kernel.
- Content-Addressable File System. Implemented a file system where all fundamental addressing of data is based on a hash of the data itself.

- Oberon Compiler. Created a compiler which implemented a selected subset of the Oberon programming language and generated optimized MIPS assembly code.
- Network Router. A software-defined Ethernet router that handled packets from the data link through transport layers and could perform advanced functions, such as a firewall.

## Technical Consultant Work

- Bailey Nurseries, Newport, Minnesota
- Bethel University Student Association, Saint Paul, Minnesota
- Hermitage No-Kill Cat Shelter, Tucson, Arizona
- Hope Christian Academy, Saint Paul Park, Minnesota
- Palace Apartments, Tucson, Arizona
- Sodexo Food Services - Bethel University, Saint Paul, Minnesota

## Service and Volunteer Work

**President**, May 2015 to January 2017
**Secretary/Treasurer**, September 2014 to April 2015
K7UAZ Amateur Radio Club

**Volunteer**, May 2015 to December 2016
Southern Arizona AIDS Foundation

**Volunteer**, July 2012 to January 2017
Hermitage No-Kill Cat Shelter

## Professional and Club Memberships

- American Radio Relay League
- Electronic Frontier Foundation
- K7UAZ Amateur Radio Club

## Skills and Interests

Amateur Radio operator
- Volunteer Examiner for the Laurel VEC

American Red Cross First Aid/CPR certification

Linux system administration:
- Linux Containers (LXC), Networking, Kernel hardening (grsec), Backups, Custom packaging, Automation, Apache, BIND, Postfix, Hadoop
- Embedded Linux Systems

Programming Languages:
- Perl, Python, C/C++, Bash, Go, Java, *Mathematica*, SQL, and others

Productivity Applications:
- TEX (LATEX, BIBTEX), Emacs, LibreOffice/OpenOffice, Microsoft Office

Free/Open Source Software enthusiast

*References Available Upon Request*