

Jonathan Allen

Mathematics and Software Development

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Objective

Obtain a position which enables me to expand my abilities in computer programming and advanced mathematics.

Education

2015 **North Dakota State University**, *Fargo, ND*.

Bachelor of Arts in Mathematics

- Elective credits in partial differential equations, combinatorics, graph theory and real analysis.
- Capstone project explored numerical semigroups, Markov bases, and extensions of the natural numbers.

2001-2005 **Minot State University**, *Minot, ND*.

Computer Science, Mathematics, Physics coursework

- Met programming proficiency requirements.
- Completed all data structures and algorithms coursework.
- Completed a concentration in physics.

Skills

Expertise C/C++, sh, Lua, git, L^AT_EX

Experience D, Python, ASP, SQL, HTML, CSS, Visual Basic, javascript, vala, Java, C#, .NET

Technical Achievements

2016 **yotp**, <http://www.github.com/ylixir/yotp>.

Command line utility for generating one time passwords. These can be used, for example, to log into ones Facebook account after enabling two factor authentication. This code could also be used on the other end, by a web service to validate users using one time passwords.

- Languages: C#
- Technologies: .net core, Mono, .NET, HOTP, TOTP, SHA1

2015 **frobmask**, <http://www.github.com/ylixir/frobmask>.

Automates computation of Frobenius numbers. Useful to mathematicians studying numerical semigroups.

- Languages: Lua 5.3

2015 **Lerna**, <http://www.github.com/ylixir/lerna>.

Web browser with lua scripting support.

- Languages: Vala, Lua
- Technologies: GTK3, WebKit, liblua

2013 **ArchNexus**, <http://www.github.com/archnexus>.

Created Linux distribution for tablet computers.

- Languages: sh, C
- Technologies: Linux, gcc, pacman

2010 – 2011 **Yaed**, <http://www.github.com/ylixir/yaed>.

Cross platform text editor.

- Languages: C
- Technologies: GTK-2, GTK-3, GtkSourceView

- 2008 – 2011 **yCurses**, <http://www.github.com/ylixir/ycurses>.
Created ncurses bindings for the D programming language.
- Languages: C, D
 - Technologies: nCurses

Related Experience

- 2014 – 2015 **Teaching Assistant**, *North Dakota State University*, Fargo, ND.
Precalculus level algebra
- Prepare and present classroom material.
 - Provide one-on-one assistance for my students.
 - Grade homework, quizzes, exams, etc.
- 2006 – 2016 **Manager**, *Papa Johns*, Minot/Fargo, ND.
Food Service
- Food and inventory preparation and management.
 - Employee and labor management.
 - Cash management.
 - Employee training.
 - Customer service.
- 2003 – 2006 **Manager**, *McDonalds*, Minot, ND.
Food Service
- Food and inventory preparation and management.
 - Employee and labor management.
 - Cash management.
 - Employee training.
 - Customer service.
- 2002 – 2003 **Programmer**, *North Dakota Center for Persons with Disabilities*, Minot, ND.
Miscellaneous programming tasks
- Use C++ and Win32 to maintain and create accessibility software.
 - Use ASP to create and maintain web applications.
 - Use SQL to interface with database back ends.
 - Design and maintain databases using MSSQL and Oracle.
- 2000 – 2002 **Web Wizard**, *Eliance*, Minot, ND.
Text chat based technical support
- Supported end users utilizing search engines.
 - Assisted end users in diagnosing and fixing computer problems for Gateway PC.
- 1997 – 2000 **Customer Support Technician**, *Sykes Enterprises*, Minot, ND.
Phone based customer support.
- Assisted users of Disney Interactive games troubleshoot and solve technical issues.
 - Assisted users of Gateway computers troubleshoot and solve technical issues.
 - Worked on Tier 1, Tier 2, and special problems teams.