

Nicholas Jean Lochner

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Personal website with code samples - <http://njlochner.com>

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EDUCATION

University of Illinois at Urbana-Champaign

Urbana, IL

- **Bachelor of Science in Computer Science**
- College of Engineering Dean's List
- James Scholar Honors Program

Expected Graduation: May 2016

GPA: 3.73/4.00

Relevant Courses:

- Data Structures, Systems Programming, Discrete Structures, Computer Architecture, Linear Algebra, Calculus 1-3, Classical Mechanics, Electromagnetism, Quantum Mechanics, Probability/Statistics, Computer Security I, Computer Security Lab, Programming Studio, Operating Systems Design, Numerical Methods I
- **Current courses:** Embedded Systems Programming, Algorithms and Models of Computation, Virtual Reality, Senior Thesis

SKILLS / STRENGTHS

Technical Skills:

- **Languages:** C, C++, Java, Python, Ruby, Wolfram Language, C#, PHP, MySQL, Bash, Verilog, LaTeX, HTML, JavaScript.
- **Software and technologies:** Subversion, Git, Microsoft Visual Studio, JetBrains IDEs, and other IDEs, Mathematica, Unity Game Engine, Adobe Flash, Autodesk Maya, Microsoft Office/LibreOffice suite, MIPS, Oculus Rift development.
- **UNIX/Linux Systems & Server Administration**

Professional strengths:

- **Self-motivated, fast learner, creative thinker, eagerness to learn new technologies, effective time manager**

EXPERIENCE

Wolfram Research

Champaign, IL

Software Engineer Intern in Connectivity Group

May 2015-Present

- Worked on various projects involving connected devices and audio processing in the Wolfram Language and Mathematica in an agile development environment.
- Developed a device driver for the Philips Hue connected home lighting system using the Wolfram Language DeviceFramework.
- Developed a real-time audio visualizer for the Philips Hue system. The visualization synchronizes the lights with audio in real time, and can analyze a file during playback or use microphone capture. This was publicly demoed at the Pygmalion Festival 2015.
- Projects involved using the Wolfram WSTP and JLink frameworks to create C, C++, and Java libraries for use with the Wolfram Language and Mathematica.

University of Illinois at Urbana-Champaign Computer Science Department

Urbana, IL

Course Assistant for Systems Programming

Summer 2014-Spring 2015

- Developed two digital programming exams testing students on C string manipulation, file I/O, system calls, POSIX threads, inter-process communication (signals, pipes), and networking.
- Assisted the students during weekly office hours and on an online discussion board.

Treasure Coast Crisis Intervention Team

Fort Pierce, FL

- Developed, maintained, and hosted a website using PHP, MySQL, and Adobe Flash.

2009-2010

PERSONAL PROJECTS

Automated web application vulnerability tester

- Checks a list of IP addresses for vulnerabilities.
- Uses Nmap to scan for running services.
- Checks for Heartbleed, Shellshock, XSS, and a return-to-libc buffer overflow via non-malicious exploits.
- Aggregates URLs on host systems and writes vulnerability data to a JSON file.
- Includes Metasploit auxiliary module support.

Real-time strategy game with procedurally generated planet terrain

- Features a procedural terrain generator written in C++ using the Diamond-Square algorithm.
- Program generates terrain for an Earth-sized planet, including ice caps.
- Displays a two-dimensional topographic map with the player's cities and units.
- Player and AI can manage their cities and units, and attack and conquer enemy cities.
- Includes path finding using the A* algorithm.

Teamspeak 3 chat/music bot

- Developed a chat bot in C for Teamspeak 3 voice communication software which communicates with the server via a telnet interface.
- Read in text commands from users to preform functions.
- Parses URLs containing audio to play back through the Teamspeak 3 server.

Subversion Portfolio website

- Developed a personal portfolio website written in Ruby with Bootstrap for CSS styling.
- Includes a file browser for all files in the projects, capable of showing past revisions.
- Parses SVN log and list XML data to render the portfolio.
- Allows viewers to comment on each project, storing the comments in a MySQL database.

Online multi-player Adobe Flash game and website

- Developed a multi-player Adobe Flash game which communicates with a PHP/MySQL server.
- Website written in PHP using a MySQL database for user registration and content updates.

LEADERSHIP, AWARDS, AND ACTIVITIES

Skills USA 3D Animation Competition

- Worked with a partner to develop a 3D Animation using Autodesk Maya in a timed competition. 2009-2011
- First Place Regional Competition
- Third Place State Competition

Other Awards

- Member of Tau Beta Pi national engineering honor society, 2014-present
- University of Illinois College of Engineering Dean's List, 2012, 2014
- Member of Alpha Lambda Delta and Phi Eta Sigma national honor societies
- President's List at Indian River State College, (4.0 semester GPA), 2011
- President's Award for Educational Excellence, 2011
- James H. Sullivan Award for Academic Excellence, 2011
- Bright Futures Medallion Scholarship, 2011

FAA Licensed Private Pilot

- Earned my Private Pilot Certificate at St. Lucie County International Airport 2008-2011
- Currently working on my Instrument Rating through the University of Illinois Institute of Aviation 2014-Present

REFERENCES

- Available upon request