Peter Goldsborough

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WORK EXPERIENCE

• Institute of Networked and Embedded Systems, Klagenfurt University, Austria Summer Intern

07/2014

- Ported Non-Intrusive-Appliance-Monitoring algorithms from MATLAB to Python, C++ and SQL.
- Created data pipeline from an Arduino and C-based smart-meter to a Linux-driven UDOO dev-board by implementing a custom serial protocol in Python and Bash.
- Visualized real-time appliance energy data in a Heroku cloud app using Python, Flask, PostgreSQL, HTML, CSS and Javascript; still live at nilm.herokuapp.com.
- Institute of Networked and Embedded Systems, Klagenfurt University, Austria Research Intern

10/2014 — Present

- Further optimization and expansion of aforementioned work with main focus on applying machine-learning concepts to transform previously supervised algorithm to an unsupervised system.
- Implemented real-time signal filtering, edge detection, clustering, feature-detection and SQLite database storage in C++ and Python, working with many million appliance-energy data-points.
- $\circ \:$ Invented custom $O(N \log N)$ clustering algorithm to replace existing $O(N^2)$ solution.
- O Wrote 3481 lines of code between October 2014 and August 2015 (working 5-10 hours/week)

SKILLS

• Expert: C++, Python

• Good: Java, Qt, PyQt, LaTeX1, Git, HTML, CSS/SASS

• Intermediate: SQL, Arduino, AVR C

- Prior Experience: JavaScript, Flask, Heroku
- (Operating) Systems: OS X, Linux, Windows, Raspberry Pi, UDOO, Arduino, ATMEL μ -controllers

PROJECTS

- Various projects found at github.com/goldsborough; snippets and scripts at gist.github.com/goldsborough
- Personal blog & website, old at the codeinn. blogspot.com, new at goldsborough.me.
- In-progress open-source C++ & Qt-based music synthesizer <u>Anthem</u> (26,575 lines of code so far) alongside 120-page <u>high-school diploma-thesis</u> on the math and engineering behind it.
- Four-part freelance tutorial project *Building a Text Editor with PyQt* published on Binpress, currently with near 50 stars on GitHub. Mentioned in PythonWeekly (issue 155) and PyCoder's Weekly (issues 131 and 132) newsletters.

EDUCATION

• BG | BRG St. Martin High School, Villach, Austria

09/2011 - 06/2015

- \circ Graduated as valedictorian with a grade average of 1.0^2 .
- School president 2013/2014; long-time involvement in student representation.
- Additional classes: Advanced Mathematics, Applied Physics, Cisco Networking.

• Technical University of Munich, Germany

10/2015 - Present

 \circ Admitted with a score of 100/100.

¹See CV. Beware: may recurse.

 $^{^2\}mathrm{The}$ Austrian school system grades from 1 to 5, 1 being best.