Peter Goldsborough

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WORK EXPERIENCE

- **Institute of Networked and Embedded Systems**, Klagenfurt University, Austria   07/2014
  Summer Intern
  - 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   10/2014 — Present
  Research Intern
  - 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.
  - Invented custom $O(N \log N)$ clustering algorithm to replace existing $O(N^2)$ solution.
  - Wrote 3481 lines of code between October 2014 and August 2015 (working 5-10 hours/week)

SKILLS

- Expert: C++, Python
- Good: Java, Qt, PyQt, LaTeX[1], 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

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PROJECTS

- Various projects found at github.com/goldsborough; snippets and scripts at gist.github.com/goldsborough
- Personal blog & website, old at thecodeinn.blogspot.com, new at goldsborough.me.
- In-progress open-source C++ & Qt-based music synthesizer *Anthem* (26,575 lines of code so far) alongside 120-page high-school diploma-thesis 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
  - 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
  - Admitted with a score of 100/100.

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[1] See CV. *Beware*: may recurse.
[2] The Austrian school system grades from 1 to 5, 1 being best.