

# Peter Goldsborough

[peter@goldsborough.me](mailto:peter@goldsborough.me) • [linkedin.com/in/petergoldsborough](https://linkedin.com/in/petergoldsborough) • [thecodeinn.blogspot.com](http://thecodeinn.blogspot.com)

## 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](http://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,  $\text{\LaTeX}$ <sup>1</sup>, 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  $\mu$ -controllers

## PROJECTS

- Various projects found at [github.com/goldsborough](https://github.com/goldsborough); snippets and scripts at [gist.github.com/goldsborough](https://gist.github.com/goldsborough)
- Personal blog & website, old at [thecodeinn.blogspot.com](http://thecodeinn.blogspot.com), new at [goldsborough.me](http://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, digital signal processing 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](https://github.com). 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<sup>2</sup>.
  - 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  
Computer Science
  - Admitted with a score of 100/100.

<sup>1</sup>See CV. *Beware*: recursion.

<sup>2</sup>The Austrian school system grades from 1 to 5, 1 being best.