# Peter Goldsborough

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## WORK EXPERIENCE

- **Facebook**, London, United Kingdom 04/2017 — Present
  Intern, Real Time Systems
  - Optimizing highly distributed real time infrastructure at the core of Facebook.
- **Bloomberg**, London, United Kingdom 11/2016 — 04/2017
  Intern, Instant Bloomberg
  - Added functionality to the Instant Bloomberg (IB) messaging system to trace messages across every hop.
  - Wrote a network traffic simulation tool that produces messages to Apache Kafka message queue clusters.
- **Google**, London, United Kingdom 08/2016 — 11/2016
  Intern, gTech
  - Built chatbots in Go, using the natural language processing engine inside Google's Allo app.
  - Built a web platform to showcase Google's ad technologies.
  - Open-sourced an AngularJS integration of Google's GPT library in an official Google GitHub organization.
- **Technical University Munich**, Germany 04/2016 — 09/2016
  Research Assistant, Chair for Database Systems
  - Investigated interprocess communication techniques for low-latency transmission of database queries.
  - Implemented a software library (10,056 lines of C) that replaces domain sockets by injecting a shared memory transmission channel. This speeds up applications by an order of magnitude.
- **Klagenfurt University**, Austria 10/2014 — 07/2016
  Research Intern, Institute of Networked and Embedded Systems
  - Applied machine learning to Non-Intrusive-Appliance-Monitoring (NIALM) in Python, C++ and SQL.
  - Invented custom $O(N \log N)$ clustering algorithm to replace existing $O(N^2)$ solution.
  - Wrote 8363 lines of C++, Python and SQL code (working 5-10 hours/week)

## PROJECTS

- Lead a team of 12 students to develop an architecture-independent assembly simulator in C++14 and Qt5 supporting RISCV-V, x86 and ARM ISAs.
- clang-expand is a clang and LLVM based tool to inline function calls and expand macros in C, C++ and Objective-C for visual benefit and easier refactoring. Featured in LLVM Weekly 169.
- lru-cache is a least-recently-used (LRU) cache implementation in modern C++ that allows for efficient function memoization while avoiding a memory blowup.
- Talks on *Deep Learning with TensorFlow* at PyCon UK, Python Munich and PyData London.
- All my projects can be found at github.com/goldsborough.

## EDUCATION

- **Technical University of Munich (TUM)**, Germany 10/2015 — Present
  B.Sc. in Computer Science
  - Top 5% in all courses.
  - Awarded German National Scholarship (1% of applicants admitted).

## PUBLICATIONS

- Christoph Klemenjak, Peter Goldsborough, *NILM: A Review and Outlook*, Sep. 2016. Preprint: arXiv:1610.01191
- Peter Goldsborough, *A Tour of TensorFlow*, Aug. 2016. Available: arXiv:1610.01178