

LELAND JANSEN

Contact

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BSc Software Engineering

University of Alberta
Class of 2019

Languages

Advanced proficiency in
Modern C++
Rust
Swift

C
C#
Java
JavaScript
Mathematica
MATLAB
Objective-C
PHP
Python
Ruby
SQL
TypeScript

English (native)
Español (advanced)

Technologies

Bazel
CMake
Git
Google Benchmark
Google Test/Google Mock
gRPC
LLVM
Protocol Buffers

Cocoa
Cocoa Touch
Docker
networking
.NET
NUnit
RSpec
WPF

EMPLOYMENT

Microsoft · Software Engineer · Outlook Mobile

July 2019 – Present

- Design, architect, and contribute to Outlook's iOS client to ship new features and improve app performance for **tens of millions of customers**.
- Pioneered **Spoor** (described below), a low-level toolchain to produce and analyze **exhaustive app traces** for performance and logic debugging.
- Own the Contacts experience including the in-app address book and device sync infrastructure. Lead a **contacts API design** proposal through months of iteration, authored the API proposal document, and represented Outlook's engineering team when presenting the proposal to Apple.
- In collaboration with the product and design teams, shipped the Contact Segregation and Personal-to-Work MailTips features that enable **hundreds of thousands of new users** to adopt Outlook Mobile in their regulated industries.
- Summer 2020 internship mentor. Worked closely with my intern to implement an upcoming mail feature that impacts **millions of users** while helping them secure a full-time offer.

www.lelandjansen.com/microsoft | apps.apple.com/app/id951937596 | C++, Swift, Cocoa Touch

Apple · iOS Keyboards Intern · Input and Intelligence

May – December 2018

- Developed the **system-wide Intelligent Text Selection** feature that shipped to **hundreds of millions of customers** in iOS 13. Responsible both the frontend and backend logic. Presented the feature to Apple's SVP Software.
- Researched machine learning techniques to detect **QuickPath** (swipe typing) inflection points. Developed an **end-to-end pipeline** including the tooling, implementation, and evaluation.

www.lelandjansen.com/apple | Objective-C, C++, Cocoa, Cocoa Touch, Python

Google · Software Engineering Intern · AdsCrawl

May – August 2017

- Developed Lightbulb, an RPC sharding service, from **start-to-finish** in three months including its design, implementation, testing, and deployment.
- Lightbulb reduced rejections between ads services by **6.1x** and compressed the standard deviation by **5.0x**. Enables the upstream service tasks to scale without disproportionately increasing rejections.
- Processes **hundreds of thousands of requests per second**.

www.lelandjansen.com/google | C++, Google Test, Stubby (gRPC), Protocol Buffers, Borg (Kubernetes)

Zaber · Software Developer Intern · Firmware and Electronics

January – April 2017

www.lelandjansen.com/zaber | C#, .NET, WPF, Python

Shopify · Developer Intern · Production Engineering

May – August 2016

www.lelandjansen.com/shopify | Ruby, Chef, RSpec

PROJECTS

Spoor · Compiler-assisted app instrumentation

- Greenfielding a toolchain to instrument LLVM-based languages at compile-time to generate an **exhaustive app trace** at runtime for performance and logic debugging.
- Developed an **end-to-end toolchain** including the build system, tooling, compiler instrumentation, runtime engine, offline processing tools, tests, and benchmarks.
- Implemented a **highly configurable buffer system** that enables the runtime engine to scale from consumer mobile devices to high-end server hardware by **optimizing dynamic allocations** and **minimizing heap fragmentation**. Reduced the in-memory and on-disk footprint by **100x**.

Slated to be open sourced in 2021 | C++, LLVM, Bazel, Google Test/Mock/Benchmark

TickTickTick · Winning hackathon project

- Lead a team of five to develop a Slack feature in only **ten hours** to remotely execute code snippets.
- Responsible for the project scoping and planning, containerization, and backend infrastructure.
- TickTickTick won **first place (\$10,000)** against fifteen other teams.

www.lelandjansen.com/tickticktick | JavaScript, Docker

COMPLEMENTARY SKILLS

- Dedicated CrossFit athlete (2013 – present) training **6 days/week**.
- Composer and level 8 pianist with **first-class honors** (Royal Conservatory of Music).
- Avid scuba diver holding my Advanced Open Water, Drysuit, and Enriched Air certifications.