RUPERT HORLICK

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I am a Computer Scientist and Software Engineer with experience in functional programming and its mathematical foundations. I would like to bring the Computer Science perspective on distributed systems of information to new fields including, but not limited to, biology, politics, and sociology.

Experience

Mar – Sep 2017

Software Development Engineer, *Myrtle Software*.
Started part-time while completing my Masters degree and moved to full-time in June. Worked on compiling neural networks to FPGAs, using modern tools such as the Haskell programming language and the Nix build system. Joined as one of three developers and quickly became a leading member as the team grew.

Summer 2016

Research Intern, *Microsoft Research Cambridge*.
Worked under Simon Peyton-Jones on a project to add functions and rich data structures to Excel. Prototyped an interesting new data structure and prepared demos. The demos were presented to project managers in Redmond and were well received.

Summer 2014 & 2015

Software Engineering Intern, *Money&Co*.
Automated a large Excel financial projection in Java, using object-oriented functors to handle dependencies between calculations. The software was deployed and is now used daily by a team of financial analysts. Rebuilt the company website from scratch using Bootstrap, HTML, jQuery, Less, and Java.

Education

2016 – 2017

MEng Computer Science, *University of Cambridge*, Distinction.
Modules — Category Theory, Multicore Semantics & Programming, Advanced Functional Programming, Distributed Games & Strategies, and Interactive Formal Verification. Thesis — Formalised the theory of Generalised Species in Homotopy Type Theory (HoTT) using Agda. In HoTT, types have an ∞-groupoid structure, so we developed the theory for groupoids internally, rather than building a Category Theory library.

2013 – 2016

BA (Hons) Computer Science, *University of Cambridge*, 1 (81%, Rank: 8/81).
Dissertation — Built the Path ORAM cryptographic primitive in OCaml on MirageOS, to allow search over encrypted documents. I analysed the performance and security properties in the 10,000 word dissertation.

2007 – 2012

High School, *St. Paul's School*.
A-Level   Computing — A*, Maths — A*, Further Maths — A*, Physics — A*
AS-Level   Chemistry — A
GCSE   10 A*s, 1 A

Other

Technical Skills
- Haskell, OCaml, Nix, Java
- git, Octave, LaTeX

Qualifications
- CSIA Level 1 Ski Instructor
- Grade 5 Drum Kit