

# DAMIEN ENGELS

*Enthusiastic Hacker*

## EDUCATION

MARCH-SEPT. 2016	<b>Stanford University</b>	<i>Master Thesis</i>
SEPTEMBER 2016	<b>Ecole Polytechnique Fédérale de Lausanne</b> GPA: 5.40 / 6.0	<i>Masters Degree in Computer Science</i>
AUG. 2012-MAY 2013	<b>Carnegie Mellon University</b> GPA: 3.77 / 4.0	<i>Exchange Student</i>
JULY 2013	<b>Ecole Polytechnique Fédérale de Lausanne</b> GPA: 5.63 / 6.0	<i>Bachelor Degree in Computer Science</i>




## CORE EXPERIENCE

MARCH-SEPT. 2016	 <b>Hacking on Delite: Enhanced Loop Fusion and Tooling</b> <i>Stanford Pervasive Parallelism Lab</i> <b>MASTER THESIS PROJECT.</b> INTEGRATED IMPROVED OPTIMIZATIONS IN THE <b>DELITE</b> COMPILER ARCHITECTURE FRAMEWORK. DEMONSTRATED SPEEDUP BENEFITS OF UPTO 7.46X. CREATED NEW TOOLS TO TACKLE DEBUGGING CHALLENGES UNIQUE TO THE DELITE ARCHITECTURE.
SEP.-DEC. 2015	 <b>Scala.js improvements</b> <i>EPFL Programming Methods Laboratory</i> OPTIONAL MASTER SEMESTER PROJECT. WORKING WITH A PARTNER, PORTED THE SCALAMETER MICROBENCHMARKING FRAMEWORK TO SCALA.JS, THE SCALA TO JAVASCRIPT COMPILER. THEN, USING THE ACQUIRED KNOWLEDGE, ADDED SEVERAL OPTIMIZATIONS TO THE SCALA.JS OPTIMIZER.
FEB.-JUNE 2015	 <b>DevSearch</b> <i>Code Search Made Better</i> IN A TEAM OF 10 PEOPLE, IMPLEMENTED A SEARCH ENGINE FOR SOURCE CODE THAT ACCEPTS CODE SNIPPETS AS INPUT. EXTRACTED 440 MILION DIFFERENT FEATURES FROM 535GB OF GITHUB DATA (70 MILION SOURCE FILES). WRITTEN IN SCALA, OPTIMIZED THE SEARCH ENGINE RESPONSE TIME FROM MINUTES TO SECONDS.
SEPT.-DEC. 2014	 <b>Improving C++ Virtual Calls Protection in the Code-Pointer Separation Mechanism</b> <i>Dependable Systems Lab</i> MASTER SEMESTER PROJECT. MODIFIED THE CLANG C++ COMPILER AND BUILT AN LLVM PASS THAT ALLOWS TO ENFORCE VALIDITY OF VIRTUAL TABLE POINTERS AT RUN-TIME WITH NO MEMORY ACCESS AND THUS VERY LOW OVERHEAD (1-5%).
FEB.-JULY 2014	 <b>Symbolic Execution Based Testing</b> <i>Cisco Systems</i> DESIGNED AND IMPLEMENTED TOOLS BASED ON THE S2E PLATFORM AND INTEGRATED THEM INTO CISCO'S TOOL CHAIN AND DEVELOPMENT PROCESS. MEASURED THE BENEFIT OF WHITE-BOX FUZZING FOR CISCO'S PRODUCTS. CONTRIBUTED TO THE S2E PLUGINS.
JAN.-MAY 2013	 <b>Operating Systems Project</b> WORKED WITH A PARTNER TO CREATE A SMALL LINUX-LIKE KERNEL WITH VIRTUAL MEMORY AND PROCESS SCHEDULING. UNCOVERED CONCURRENCY AND MEMORY BUGS TO CREATE A ROBUST FINAL PRODUCT. MANAGED A LARGE CODE BASE (9 KLOC) USING GIT.

## TECHNICAL SKILLS & LANGUAGES

PROGRAMMING	SCALA, C, JAVA, C#, BASH, PYTHON, C++, JAVASCRIPT, LUA, PERL	FLUENT	FRENCH, ENGLISH
SKILLS	COMPILER CONSTRUCTION, REACTIVE PROGRAMMING, SYSTEMS PROGRAMMING, WEB DEVELOPMENT, BIG DATA ANALYTICS	BASIC	ITALIAN, GERMAN

## ADDITIONAL EXPERIENCE

CURRENT		<b>Google</b> <i>Software engineer</i>
JUNE-SEPT. 2015		<b>Microsoft</b> <i>Software engineer internship – SharePoint Authentication and Authorization</i> RESPONSIBLE FOR COLLECTING AND DISPLAYING TELEMETRY ABOUT USER SCENARIOS IN THE CLOUD. DEVELOPED INTERNAL TOOLS TO FACILITATE CREATION AND DEPLOYMENTS OF MONITORS THAT TRACK THE SYSTEM'S HEALTH.
AUG.-SEPT. 2014		<b>SwissMediaPartners AG</b> <i>Software engineer</i> RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF A WEB SERVICE. IMPLEMENTED THE REST API AND WEB ADMINISTRATIVE CONSOLE. USED AND GOT FAMILIAR WITH AN EXTENSIVE NUMBER OF WEB DEVELOPMENT TOOLS (PLAY FRAMEWORK, BOOTSTRAP, JAVASCRIPT, COFFEESCRIPT, LESS, SBT)

## AWARDS

FEB. 2015	<b>FIRST PLACE AT START UP WEEKEND LAUSANNE</b>
SEPT. 2013	<b>EXCELLENCE FELLOWSHIP</b> FOR MASTER'S STUDIES AT EPFL
MAY 2013	<b>DEAN'S LIST</b> OF THE SCHOOL OF COMPUTER SCIENCE AT CARNEGIE MELLON UNIVERSITY
JULY 2010	<b>MATHEMATICS AND APPLIED MATHEMATICS DISTINCTION</b> AT GYMNASÉ DE NYON

## EXTRA-CURRICULAR ACTIVITIES

<b>MUSICBOT</b> (WORK IN PROGRESS)	EXPLORATION OF WEB TECHNOLOGIES THROUGH EXPERIMENTATION. SCALA.JS, WEBSOCKETS, ACTOR PROGRAMMING, PLAY FRAMEWORK, SPOTIFY'S APIS, OAUTH2, MATERIALIZECSS, REACT.
STUDENT ASSISTANT	INFORMATION, COMPUTATION, COMMUNICATION – COMPILER CONSTRUCTION INFORMATION SCIENCE – DISCRETE STRUCTURES – INFORMATION TECHNOLOGY PROJECT
ROWING	CLUB D'AVIRON NYON (3RD PLACE IN 8+ JUNIOR AT THE SWISS CHAMPIONSHIPS) CARNEGIE MELLON VARSITY CREW (2ND PLACE IN 4+ AT THE HEAD OF THE OHIO)
STUDENT COUNCIL	MASTERS CLASS DELEGATE AND VICE-PRESIDENT OF <b>CLIC</b> (ASSOCIATION DES ÉTUDIANTS EN INFORMATIQUE ET COMMUNICATIONS)
<b>HC<sup>2</sup></b>	ORGANIZATION OF ONE OF SWITZERLAND'S LARGEST ALGORITHMIC CONTESTS.

## PERSONAL DATA

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