# Timothy K. Paine

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## Education

**Columbia University in the City of New York — New York, NY**
Fu Foundation School of Engineering and Applied Sciences
M.S. in Computer Engineering — 2015
B.S. in Computer Engineering, *Magna Cum Laude* — 2015
Columbia College
B.A. in Computer Science/Mathematics — 2015

**Sophia University — Tokyo, Japan — Summer 2011**

## Work Experience

**J.P. Morgan**
Athena Core Developer — March 2016 - Present
Develop real time analytics platforms (**Python, C++, Java, Javascript**)
Third Party Integrations (Jupyter, Zipline, Pyfolio, Theano, Tensorflow, Zipkin)
Library build systems (Intel icc/ifort, mkl, VTune, gcc, ATLAS)

**MayStreet**
Software Engineer — July 2015 - January 2016
Developed low latency market data and order entry systems for North American, European, and Asian exchanges (**C++, C#, Java**)
Developed market data analytics platforms for analyzing market micro-structure via colo-captured pcap data (**Python, C++, and R**)

**Columbia University**
Adjunct Associate Professor — Summer 2015 - Present
ENGI1006 Introduction to Computing for Scientists and Engineers (**Python**)
COMS3101 Programming Languages - **Python**
COMS3101 Programming Languages - **C++**
COMS1005 Introduction to Computer Science and Programming in **Matlab**

**Credit Suisse**
Equities/Quantitative Analyst Intern – Tokyo, Japan — Summer 2014
Built predictive models for company earnings and price movement
Leveraged data mining, machine learning, and wavelet analysis (**R, Python**)

**IBM**
Software Group Intern — Summer 2013
Developed and tested front ends for B2B applications (**Python, javascript**)
Gained experience in Agile development methodology

**Columbia University**
Teaching Assistant — Fall 2012 - Spring 2015
Advanced Programming (**C, C++**)
Computer Architecture
Fundamentals of Computer Systems
Introduction to Combinatorics and Graph Theory
Introduction to Computing for Scientists and Engineers (**Python**)

## Projects

**Architecture and Design Lab**
Researcher — Summer 2012 - Spring 2015
Hardware Design/Verification/Synthesis and FPGA prototyping of a database accelerator (**Verilog**, **SystemVerilog**, **Altera** toolchain and FPGAs, **Synopsys** synthesis tools)

**Computer Architecture and Security Technology Lab**
Researcher — Fall 2014 - Spring 2015
Built a hybrid HW/SW Cryptography unit in SystemVerilog targeting a custom FPGA board (**SystemVerilog**, **Altera** toolchain and FPGAs)

**Embedded Scalable Platforms** — Fall 2014 - Spring 2015
Built a Hardware Accelerator for Latent Dirichlet Allocation in SystemC (**SystemC**, **Xilinx** toolchain and FPGAs, **Cadence** CtoS/Cynthesizer/Stratus)

**Facebook Open Academy**
OpenStack Team — Spring 2014
Built two-factor authentication for OpenStack's Keystone Identity Service
Integrated two-factor authentication with OpenStack's Horizon UI and dashboard (**Python**)

Current projects can be found at http://tim.paine.nyc

## Publications

**Q100: The Architecture and Design of a Database Processing Unit.**
L.Wu, A. Lottarini, T. Paine, M. Kim, K.Ross
**ASPLOS 2014**: Nineteenth International Conference on Architecture Support for Programming Languages and Operating Systems. **IEEE Micro Top Pick.**

## Awards/Honors

**Theodore R. Bashkow Award**
Columbia University Computer Science Department — 2014

**MSTA Fellowship**
Columbia University — 2015 — Full Tuition for Master's Degree

**Jerry and Evelyn Bishop Scholarship**
Columbia University — 2015

**Margarete E. Kennedy Estate Scholarship**
Columbia University — 2010

**Japan Student Services Organization (JASSO)**
Sophia University — 2011

National Merit, Advanced Placement, and other pre-college honors
Please see http://tim.paine.nyc

## References

Available upon request