

Matthieu Martin

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Summary

Software Engineer at Facebook since September 2012.

Skills

- **Expertise:** Software architecture, object-oriented programming, design patterns, agile development, complex problem-solving, secure development
- **Languages:** C/C++, Python, C#, JavaScript/jQuery, Java, PHP
- **Web Technologies:** HTML/CSS, Django, AJAX, PostgreSQL, Redis, Struts, Hibernate
- **Libraries:** Flex, Bison, Accord.NET, OpenGL, Boost, WPF

Experience

- **Software Engineer at Facebook** *September 2012 – Current*
Internet content provider, Menlo Park, California
<https://www.facebook.com>
- **Founder at eSport Betting League** *September 2011 – July 2012*
Play money betting on electronic sports, Mountain View, California
Founded with Damien Letellier an innovative website based startup. Providing a central location for fans of eSports to bet on professional gaming tournaments.
- **Research Engineer at Stanford Security Laboratory** *March 2011 – October 2011*
University, Stanford, California
Worked with Pr. John C. Mitchell and Dr. Elie Bursztein on analyzing CAPTCHA efficiency. Lead developer of Decaptcha, the tool designed to assess image, audio and video CAPTCHAS security against cutting-edge imaging and machine learning algorithms. Implemented advanced vision algorithms and used numerous machine learning classifiers. Worked with Dr. Elie Bursztein and Jean-Michel Picod on developing OWADE, a Windows offline forensic tool. Responsible for the pipeline architecture and the integration of various forensic modules. Coordinated the development cycle.
- **Teaching Assistant at EPITA** *Jan. 2010 – Feb. 2011*
Engineering school, Paris, France
Responsible for teaching C, C++ and Java on Unix to first year students at EPITA. Developed and supervised multiple C++ projects designed to teach students software design and oriented-object programming. Coordinated a team of five teaching assistants responsible for supervising the shell and the compiler projects.
- **Software Engineer at Olfeo** *Aug. 2009 – Jan. 2010*
Network appliances manufacturer, Paris, France
Responsible for designing and implementing in Python a framework to perform regression testing and performance measurement. Re-engineered the development cycle to increase and improve the quality of the appliance software releases. Established the performance and quality metrics used to analyze the improvement of the appliance software between iterations.

Education

- **Computer Engineering Degree** *2005 – 2011*
Ecole Pour l'Informatique et les Techniques Avancees, Paris, France
System, Network, and Security specialization

Projects

Research

- **Decaptcha:** A generic image, audio and video captcha breaker **C#**
Presented at the 18th ACM Conference on Computer and Communications Security
<http://cdn.ly.tl/publications/text-based-captcha-strengths-and-weaknesses.pdf>
With Pr. John C. Mitchell and Dr. Elie Bursztein
 - Designed the generic architecture of the pipeline for image, audio and video captchas
 - Created the user friendly interface for the breaker using WPF (based on the Visual Studio one)
 - Implemented most of the modules for the image captcha pipeline, from denoising to classifying the letters
 - Broke 13 out of the 15 targeted captchas (*Blizzard, Captcha.net, Digg, eBay, Slashdot, Wikipedia...*)
- **OWADE:** A cloud-based forensic tool **Python**
Presented at the Black Hat, USA 2011
<http://cdn.ly.tl/talks/owade-paper.pdf>
With Dr. Elie Bursztein and Jean-Michel Picod
 - Designed and realized OWADE's core architecture, database and module system
 - Created the user interface for the tool using Django
 - Implemented many modules including the file extraction and the Firefox password recovery

Academia

- **Tiger:** A compiler **C++**
<http://lrde.epita.fr/~akim/ccmp/assignments.html>
 - Coordinated a group of five during six months
 - Conceived the language parser with Flex and Bison
 - Implemented the compiler's binder and type-checker
 - Realized the transformation from the AST into x86 executable code
- **Kaneton:** A Microkernel **C – ASM**
<http://osnews.com/story/15018/>
 - Built a microkernel from the boot loader up to the filesystem driver
- **MyPhotoshop:** A lightweight version of Photoshop **Java**
 - Created the user friendly interface using SWT
 - Designed and realized the layer engine
 - Implemented image editing tools: pen, zoom, bucket filling, cropping...