

# Emmanouil Antonios Platanios

**Date of Birth:** 07/07/1991

**Nationality:** Greek

**Languages:** Greek (native), English (fluent), German (intermediate)

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## RESEARCH AREAS

- Theoretical artificial intelligence and machine learning (I am currently focusing on **unsupervised** and **semi-supervised learning** and more specifically, I am trying to introduce **self-reflection** in the context of machine learning)
- Applications of artificial intelligence and machine learning to natural language processing, robotics, computer vision and finance

## EDUCATION

- 2013-now **Carnegie Mellon University – Ph.D. in Machine Learning** **USA**
- **GPA:** **4.18** (4.0 scale)
  - **Advisor:** **Prof. Tom M. Mitchell**
  - I work on the **Never Ending Language Learning (NELL)** project (more information can be found in [rtw.ml.cmu.edu](http://rtw.ml.cmu.edu))
  - I do research on topics related to **self-reflection in machine learning**:
    - I have developed a method for using unlabeled data to estimate the accuracies of several different classifiers performing the same task, which I presented at the **Uncertainty in Artificial Intelligence (UAI) conference** in 2014
    - I am developing a self-reflection mechanism for machine learning systems and I am applying it in NELL
- 2013-15 **Carnegie Mellon University – M.Sc. in Machine Learning** **USA**
- **GPA:** **4.18** (4.0 scale)
  - **Advisor:** **Prof. Tom M. Mitchell**
  - **Thesis:** **Estimating Accuracy from Unlabeled Data**
  - Master's degree requirements completed while working towards obtaining my Ph.D. in machine learning
- 2009-13 **Imperial College London – M.Eng. and ACGI in Electrical and Electronic Engineering** **UK**
- Integrated Bachelor's and Master's degree
  - **Dean's List** for exceptional academic performance (all four years)
  - **Grade:** 91.67% (ranked in top 1% of class) with **92.37%** on the final exams – **First-Class Honors Degree**
    - Equivalent to **4.0 GPA** in the USA academic system
  - **Thesis Title:** *"Human Motion Classification Using Statistical Machine Learning Methods"*
    - Awarded the **Sir Bruce White prize in engineering** for the best final year project
  - **3<sup>rd</sup> Year Summer Research Project:** *"Bayesian Machine Learning Methodologies for Modeling Time Series with High Volatility"*
    - Volatility modeling and prediction in a multitude of applications with significance both for industry (e.g. finance) and academia
    - Development of three statistical regression models:
      - Variational Heteroscedastic Multi-Output Gaussian Process Employing a Convolved Kernel with Echo State Property
      - Pitman-Yor Process Mixture Variational Heteroscedastic Multi-Output Gaussian Process
      - Markov Switching Variational Heteroscedastic Multi-Output Gaussian Process
    - Derivation of inference algorithms for the above models, using both the variational Bayesian paradigm and sampling approaches
    - This work was published in the **IEEE Transactions in Pattern Analysis and Machine Intelligence (TPAMI)** journal
- 2007-09 **Geitonas School – International Baccalaureate** **Greece**
- Received a **Certificate of Excellence** from the Greek Ministry of Education and Religious Affairs

## WORK EXPERIENCE

- 2015 **Researcher at Microsoft Research** **USA**
- **Manager:** **Dr. Eric Horvitz**, Distinguished Scientist and Managing Director of Microsoft Research
  - Design and development of a completely new version of the **Literome Project** that includes **self-reflection** aspects
- 2010-13 **Co-Founder, President and Chief Technology Officer (CTO) at Holic** **Greece, UK**
- Development of an intelligent news reader application
  - Development of algorithms utilizing advanced nonparametric Bayesian models for clustering news articles and for user profiling
  - Received **€400,000** funding from the following investors:
    - Dr. John Coustas, President & CEO of Danaos Corporation
    - Mr. Leon Yohai, Founder & CEO of ZuluTrade
- 2008-10 **Founder of Project Protasis – Forest Protection** **Greece**
- Development of a forest fire detection and prevention system
  - Development of software (involving use of neural networks for recognizing fire and smoke in photos) and related hardware
  - Prototype installed in *"Alsos Syggrou"*, a wooded area in Athens, funded by the Greek government
  - Patent approved in Greece (**Patent #: 20110100016**) and international patent pending approval
  - Interviewed by CNN, as well as several newspapers, magazines and other TV channels, regarding this project
  - Won the 2<sup>nd</sup> place in the **Microsoft Imagine Cup 2009** Greek Finals with this project – due to regulations a previous winner cannot win for a second time
- 2010 **Web Designer and Software Developer at Curtainmakers S.A.** (a major curtain making company based in Athens) **Greece**
- 2009-10 **Software Developer at vWorker.com** (a software development outsourcing web-based company) **Greece**

- 2007-09 **Founder of Project Protasis – Home Automation** **Greece**
- Development of a smart home automation system that controls all electrical appliances, heating systems and water systems and aims to reduce domestic energy consumption while making the lives of homeowners as comfortable as possible
  - Development of software, employing several machine learning algorithms
  - Funded by the Greek government and more specifically, by the Organization of School Buildings
  - Interviewed by NBC, as well as several newspapers, magazines and other TV channels, regarding this project
  - Won the **Microsoft Imagine Cup 2008** Greek Finals with this project and represented Greece in the Imagine Cup 2008 Worldwide Finals, in Paris, France, competing against teams from universities, at **age of only 16** and having worked **without a team or a mentor**
- 2007-08 **Software Developer and I.T. Professional** at **Sigma Group Inc.** (an advertising company based in New Jersey) **USA**
- 2006 **Software Developer and I.T. Professional** at **Embiria S.A.** (an engineers' consulting company based in Athens) **Greece**

## HONORS AND AWARDS

- 2013 ▪ Awarded the **Sir Bruce White prize in engineering** for the **best thesis** during my M.Eng. studies at Imperial College London
- 2010-13 ▪ **Dean's List** at Imperial College London, for exceptional academic performance (all four years)
- 2010 ▪ Nominated for the **RAE (Royal Academy of Engineering)** presentation skills award
- **"Roll of Honor"** of the Electrical and Electronic Engineering department of Imperial College London, for the best software design project in the year
- 2009 ▪ Awarded a congratulatory diploma for my work on *"Project Protasis – Home Automation"* by **UNESCO**
- Awarded an **honorary plaque** by the **Minister of Education and Religious Affairs** for honoring my country internationally
- 2007-08 ▪ Awarded a **full scholarship** (of about €12,000) by *"Geitonas School"*, for honoring my school internationally
- Had a **computer science laboratory named after me** in *"Geitonas School"*, for honoring my school internationally
- Awarded €1,000 by the **President of the Greek Parliament**, for honoring my country internationally
- Awarded an **honorary plaque** by the Mayor of my city, Vari, in Greece, for honoring my country internationally
- Represented Greece in the **Microsoft Imagine Cup 2008 Worldwide Finals**, in Paris, France, with *"Project Protasis – Home Automation"*
- Won the **Microsoft Imagine Cup 2008 Greek Finals** with *"Project Protasis – Home Automation"*, competing against **teams from universities**, at age of **only 16** and having worked **without a team or a mentor** (also won the 2<sup>nd</sup> place in the **Microsoft Imagine Cup 2009 Greek Finals** with *"Project Protasis – Forest Protection"* – due to regulations a previous winner cannot win for a second time)
- 2007 ▪ Received a **Certificate of Excellence** for the school year 2006-07 from the Greek Ministry of Education and Religious Affairs
- Won the 3<sup>rd</sup> place (bronze medal) in the **Greek Mathematics Olympiad**, organized by the Hellenic Mathematical Society
- 2003-07 ▪ Won a total of **11 scholarships** and competitions in the fields of mathematics, sciences and computer science

## RESEARCH PUBLICATIONS

- **Emmanouil A. Platanios**, "Estimating Accuracy from Unlabeled Data", **Master's Thesis** at **Carnegie Mellon University**, 2015
- Tom M. Mitchell, William Cohen, Estevam Hruschka, Partha Talukdar, Justin Betteridge, Andrew Carlson, Bhavana Dalvi, Matt Gardner, Bryan Kisiel, Jayant Krishnamurthy, Ni Lao, Kathryn Mazaitis, Tahir Mohammad, Ndapa Nakashole, **Emmanouil A. Platanios**, Alan Ritter, Mehdi Samadi, Burr Settles, Richard Wang, Derry Wijaya, Abhinav Gupta, Xinlei Chen, Abulhair Saparov, Malcolm Greaves, and Max Welling, "Never-Ending Learning," in the AAAI Conference on Artificial Intelligence (**AAAI**), 2015
- **Emmanouil A. Platanios** and Tom M. Mitchell, "Estimating Accuracy from Unlabeled Data", in the Uncertainty in Artificial Intelligence (**UAI**) conference proceedings, 2014
- **Emmanouil A. Platanios** and Sotirios P. Chatzis, "A Mixture Gaussian Process Conditional Heteroscedasticity Model with Power-Law Nature", in IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), vol. 36(5), pp. 888-900, 2014
- **Emmanouil A. Platanios** and Sotirios P. Chatzis, "Nonparametric Mixtures of Multi-Output Heteroscedastic Gaussian Processes for Volatility Modeling", in the "Modern Nonparametric Methods in Machine Learning" Neural Information Processing Systems (**NIPS**) workshop, 2012

## MAJOR TALKS

- 2014 ▪ *"Estimating Accuracy from Unlabeled Data"*, at: **USA**
- **Uncertainty in Artificial Intelligence (UAI)** conference
  - Machine Learning Lunch at Carnegie Mellon University
- 2012 ▪ *"Nonparametric Mixtures of Multi-Output Heteroscedastic Gaussian Processes for Volatility Modeling"*, at the *"Modern Nonparametric Methods in Machine Learning"* Neural Information Processing Systems (NIPS) workshop **USA**
- 2009 ▪ *"Project Protasis – Forest Protection"*, at: **Greece**
- **Microsoft** in Athens, Greece
  - **Ministry of Transportation** of the Greek government, in Athens (the Ministry later funded a pilot program)
- 2008-09 ▪ *"Project Protasis – Home Automation"*, at: **Greece, France**
- **Microsoft** in Athens, Greece and Paris, France
  - *"International Conference on Climate Change and Challenges for the Future Generations"*, organized by **UNESCO**, in Athens
  - **Organization of School Buildings** of the Greek government, in Athens (later received funding for a pilot program from the Ministry of Education and Religious Affairs which administers this organization)
  - *"73<sup>rd</sup> Thessaloniki International Fair"*, in Thessaloniki
  - *"Generation Next 0-18"* fair in Athens
  - *"4<sup>th</sup> International Conference on Information and Communication Technologies in Bio and Earth Sciences"* (HAICTA 2008), in Athens

## TEACHING EXPERIENCE

- 2014     **Teaching Assistant** for the **10-701/15-781 Machine Learning** graduate-level course at **Carnegie Mellon University**     **USA**
- Responsibilities included giving recitation lectures and writing and grading homework assignments and exams

## DEVELOPMENT SKILLS

- High Level Programming Languages: C#, Java, C, C++, Pascal, Prolog, MATLAB, Python, Mathematica, JavaScript
- Low Level Programming Languages: Intel 80x86 Assembly, ARM Assembly, AVR Assembly
- Programming Environments (IDEs): Visual Studio, MATLAB, IntelliJ IDEA, Eclipse, NetBeans, Mathematica, SWI-Prolog IDE
- Database Systems: SQL Server, MySQL

## OTHER INTERESTS

- Sports: Tennis, Basketball, Sailing, Windsurfing and Winter Skiing
- Hobbies: Travelling, Philosophy, Politics and Guitar Playing

## COMMUNITY SERVICE

- 2009     ▪ Volunteer service at the Lavrion refugee center, in Athens, Greece
- 2008     ▪ Reforestation of mountainside in Rafina, Greece
- Volunteer service for the International Baccalaureate Organization (IBO) training workshop
- 13<sup>th</sup> Annual Underwater and Beach Cleanup in Athens, Greece
- Organizing member of "*Christmas Bazaar*" (fund raiser project)
- Organizing member of "*Love Feast*" (feast to celebrate family values and raise funds for the victims of the then recent fires in Greece)
- 2007     ▪ Reforestation in Mani, Greece
- Volunteer service at the "*AQUA GALA*" event for children who are physically challenged, for the "*Hellenic Society for Disabled Children*"
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