

EDUCATION

2014 - present

Imperial College London

PhD student in computer vision for realistic computer graphics supervised by Dr Abhijeet Ghosh. Centre for Doctoral Training in High Performance Embedded and Distributed Systems (HiPEDS). First year MRes awarded with Distinction.

Major Courses :

Dynamical Systems and Deep Learning, Mathematics for Inference and Machine Learning, Medical Image Computing, Advanced Statistical Machine Learning and Pattern Recognition, Concurrent Processes

Prize :

→ Second prize at the **2016 PhD Google Poster competition** of Imperial College London

Projects :

- Acquisition and rendering of diffraction effects in surface reflectance (**Best HiPEDS MRes 2015 individual project with 91%**)
- Coded an open source 3D OpenGL realistic renderer with Qt library
- Added a multiplayer mode in Ocado Technology's Code For Life web application

2013 - 2014

Imperial College London

MSc in Advanced Computing awarded with Distinction.

Major Courses :

Advanced computer graphics, Computer vision, Parallel algorithms, Computational neurodynamics, Network security, Prolog, Computational finance, Intelligent data and probabilistic inference, Performance analysis

MSc Individual Project : Image-based relighting using room lighting basis (graded 83%).

→ Open source framework made available

Coursework :

- Assembling high dynamic range photographs
- Parallelisation of the computation of a Laplace transform in C++ using MPI and OpenMP libraries
- Evaluation of the complexity of a neural network in Matlab

2011 - 2014

Telecom ParisTech formerly known as ENST – Paris, France

One of France's top engineering schools in the "Grandes Ecoles" system. Equivalent to a top-tier University specializing in engineering.

Awarded the French Diplôme d'Ingénieur.

Major Courses :

3D Computer graphics and virtual reality, Image processing, Human-computer interaction, Programming paradigms, Databases, Optical networks for cloud computing, Web engineering

Projects :

- Implemented Statistics of Patch Offsets for Image Completion by He et al. in C++
- Implemented a ray tracing renderer in C++
- Implemented Screen Space Directional Occlusion algorithm in deferred shading
- Created a Bomberman like video game on a FPGA in SystemVerilog

- 2008 - 2011 **Preparatory Classes : Marcellin-Berthelot, Saint-Maur-Des-Fossés, France**
 Advanced Mathematics and Physics class.
 Preparation for the competitive entrance examinations to French Engineering Schools in the "Grandes Ecoles" system.
- 2005 - 2008 **High School : Gutenberg, Créteil, France**
 Baccalaureate scientific received with highest honors.
 Equivalent to "A" levels in Mathematics, Physics, Biology, English.

PUBLICATIONS

- **Real-time rendering of realistic surface diffraction with low rank factorisation.** Antoine Toisoul and Abhijeet Ghosh. **CVMP 2017**
- **Practical acquisition and rendering of diffraction effects in surface reflectance.** Antoine Toisoul and Abhijeet Ghosh. **ACM Transactions On Graphics, 2017** (Presentation at **SIGGRAPH 2017**)
- **Real-time rendering of realistic surface diffraction with low rank factorization.** Antoine Toisoul and Abhijeet Ghosh. **SIGGRAPH 2017** poster
- **Accessible GLSL Shader Programming.** Antoine Toisoul, Daniel Rueckert and Bernhard Kainz. **Eurographics 2017** educational papers
- **Image-based relighting using room lighting basis.** Antoine Toisoul and Abhijeet Ghosh. **CVMP 2016**
- **Image-based relighting using room lighting basis.** Antoine Toisoul and Abhijeet Ghosh. **SIGGRAPH 2015** poster and **CVMP 2014** short-paper

WORK EXPERIENCE

- 2014 - present **Teaching assistant : Department of computing, Imperial College London**
- **Course Support Leader** in graphics : coded the open source OpenGL framework used for the coursework
 - Personal tutor in mathematics for first year undergraduate students
 - Lab helper in C programming
 - Co-supervised MSc and BEng projects in computer graphics
- July 2012 **Internship : Agence Nationale des Fréquences, Maisons-Alfort, France**
 Government agency that manages the electromagnetic spectrum in France.
- Worked as trainee on special technical specifications for a document management system
 - Wrote communication articles for employees

SKILLS

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|-----------------|---|
| Computer Skills | Machine learning, Deep learning, Computer vision, Computational photography, 3D graphics
Programming languages : C++, Python, GLSL
Libraries and API : Tensorflow, Qt, OpenCV, OpenGL, OpenMP, Dlib, CUDA |
| Languages | French : Native speaker
English : Fluent
Spanish : Intermediate |

INTEREST

- Playing guitar and piano
- Attending concerts
- Practicing Archery individually and in team
- Surfing, sailing and swimming
- Playing video games