

## Eric-Tuan Lê

Permanent address:  
100 Pratt Street,  
NW1 0DN London  
United Kingdom

Cell Phone : +33-(0)652729804

Email : [e.le@cs.ucl.ac.uk](mailto:e.le@cs.ucl.ac.uk)

Github: <https://github.com/erictuanle>

Linkedin: <https://www.linkedin.com/in/erictuanle/en>

## ACADEMIC RECORD

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- 2018 - 2022 **University College London, London, United Kingdom**  
**PhD student** within the Computer Science Department  
Research Interest: Deep Learning, Computer Vision, Graphics  
Supervised by [Prof. Iasonas Kokkinos](#) & [Prof. Niloy J. Mitra](#)
- 2016-2017 **Ecole Normale Supérieure de Cachan, Cachan, France**  
**Master of Research** in Computer Vision & Machine Learning
- Core subjects: *Deep Learning, Sparse Wavelet Representations, Large Scale Optimization, Digital Image Processing and Partial Differential Equations, Neurosciences*
  - GPA: 4.00 (range from 0 to 4) - Graduated with **Highest Honors** (Overall grade: 17.49/20)
- January-April 2016 **Singapore Management University, Singapore (Exchange Program)**
- Core subjects: *Stochastic Calculus, Derivative Securities theory, Hedge Funds, Strategy*
- 2014-2017 **ESCP Europe, London/Paris**  
**Master in Management**, highly selective Master's level school (Ranked 5<sup>th</sup> according to the [FT](#))
- Core subjects: *Entrepreneurship, Marketing, Corporate Finance, Economics, Business Law & Taxation*
  - Z-Score: 1.89 (range from -3 to 3) - Graduated with **Highest Honors**
- 2013-2017 **CentraleSupélec, Gif-sur-Yvette, France**  
Top-ranked "School of Engineering and Applied Science" – **Master of Science** in Applied Mathematics
- Core subjects: *Machine Learning & Classification, Asymptotic & Bayesian Statistics, Spectral Analysis, Sparse Representation of Signals, Optimization*
  - GPA: 3.96 (range from 0 to 4) - Graduated with **Highest Honors - Valedictorian**
- 2011-2013 **Preparatory classes for French "Grandes Ecoles", Lycée Hoche, Versailles, France**  
Intensive two-year study program required to sit competitive entrance examination to French prestigious universities – Mathematical track
- GPA: 4.00 (range from 0 to 4)

## PUBLICATIONS

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### Going Deeper with Lean Point Networks, Eric-Tuan Le, Iasonas Kokkinos, Niloy J. Mitra

*In this work, we train deeper and more accurate point processing networks by introducing three modular point processing blocks that improve memory consumption and accuracy: a convolution-type block for point sets that blends neighborhood information in a memory-efficient manner; a crosslink block that efficiently shares information across low- and high-resolution processing branches; and a multi-resolution point cloud processing block for faster diffusion of information.*

[ArXiv](#), 2019

## ACADEMIC RESEARCH PROJECTS

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- June 2017 **Analysis of a biological plausible model for parameter estimation (Matlab)**
- Implemented a maximum likelihood estimator to decode the information coded by a population of neurons with bell-shaped tuning curve (recurrent network)
  - Assessed the performance of the model: stability, quality
- May 2017 **Spectral estimation of Tip-Timing signals (Matlab)**, in partnership with Safran
- Formulation as an inverse problem: sub-sampled and non-uniformly sampled signals

- Implemented various methods to solve the LASSO problem (Coordinate Descent, FISTA, Douglas Rachford)
  - Implemented a Multiple Measurement Vector approach with different proximal algorithms
- February 2017* **Detecting copy-move forgery on digital images (Matlab)**
- Implemented Poisson seamless editing to falsify digital images
  - Dense displacement field approach: PatchMatch algorithm
  - Sparse displacement field approaches: SIFT and SURF algorithms
- January 2017* **Predicting the age of a person from EEG signals analysis (Python)**, in partnership with Dreem
- Extracted features from the coefficients of the wavelet transform of EEG signals: the energy, variance and median of each coefficient
  - Extracted features from the Hypnogram: number of transitions between each sleep state
  - Regression by different models with an appropriate loss metric
- June 2015* **Predicting the energy potential of a wind farm (Matlab)**
- Analyzed the residual component of the wind speed time series in a local area
  - Identified the wind speed temporal increment as a Gaussian mixture model
  - Implemented EM algorithm to compute the parameter vector of the distribution
  - Model selection by a majority vote of a set of different criteria (AIC/BIC, Silhouette, Elbow)
- June 2013* **Edge and pattern detection on images (Maple)**
- Edge detection with traditional approaches: first-order and second order methods followed by edge thinning algorithms
  - Edge detection with Canny analytical approach
  - Pattern detection with Hough transform in Cartesian and polar coordinates: straight line and circle detection
  - Application to real life problems: automatically detecting and measuring the diameters of radial immunodiffusion circles (for blood tests)

## STUDENTS SUPERVISION

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- 2018 - 2022* **Teaching Assistant**, edited labs, marked coursework, and tutored students in
- Computer Vision, led by [Prof. Gabriel Brostow](#) (2018)
  - Information Retrieval and Data Mining, led by [Prof. Emine Yilmaz](#) (2018)
  - Computer Graphics, led by [Prof. Tobias Ritschel](#) (2019)
  - Introduction to Machine Learning, led by [Prof. Jasonas Kokkinos](#) (2019)
  - Acquisition and Processing of 3D Geometry, led by [Prof. Niloy J. Mitra](#) (2019)
- 2017* **CentraleSupélec**, Châtenay-Malabry, France  
Supervision of a group of two Master's students on:  
*Predicting the risk of a sector of activity based on French news' sentiment analysis*

## WORK EXPERIENCE

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- April 2017 – September 2018* **Société Générale**, Paris La Défense, France  
French multinational banking and financial services company  
Research Data Scientist - General Inspection
- Led a wide range of projects on Natural Language Processing, Matrix Imputation and Model Combinations
  - Organized outreach lectures on clustering, outliers detection and Natural Language Processing for uninitiated audience
- May-September 2016* **Louis Bachelier Institute**, Paris, France  
French research center in Economics & Finance  
Research Data Scientist Internship – Data Lab
- Detection of weak signals in financial market databases to derive systematic trading strategies (internal start-up in Asset Management)
  - Estimation of the risk of loan default two month prior to delinquency

- Prediction of clients' wealth based on transactional data
- June-August 2015*     **Ernst & Young**, Paris La Défense, France  
Professional services firm: part of the "Big Four" accounting firms  
Financial Auditor Internship - Corporate Treasury and Banking
- Audited the Treasury department of CAC40 companies
  - Audited consolidated financial statements of banking companies
  - Analyzed hedging strategies of large industrial groups
- July-August 2014*     **Thales Electron Devices**, Vélizy-Villacoublay, France  
French company that designs and builds electrical systems for the aerospace and defense markets  
Internal Management Consultant Internship in Lean Management
- Analyzed production processes to reduce waste and minimize non-value added steps
  - Conducted interviews with operators to better understand their work
  - Reorganized production workshops and provided performance indicators
  - Reduced production time by nearly 20 minutes a day while mitigating risks of failure

## LANGUAGES AND COMPUTER SKILLS

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<b>Languages</b>	French: Native speaker English: Fluent (TOEFL iBT 110/120) Spanish: Intermediate Chinese: Beginner
<b>IT</b>	Microsoft Office Suite (Word, Excel, Access, PowerPoint), LaTeX Adobe Creative Suite (Illustrator, Photoshop, Premiere) Matlab, Python (Tensorflow, Pytorch), Ruby, Java, C++ HTML & CSS

## INTERESTS AND EXTRA-CURRICULAR ACTIVITIES

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<b>Student Society</b>	<b>Supélec Rézo Society</b> , 2013-2015, Gif-sur-Yvette, France <ul style="list-style-type: none"> <li>○ Supplied Internet access to students and managed daily issues (breakdown, security updates)</li> <li>○ Provided IT support and training courses on cyber security, website creation ...</li> <li>○ Implemented an internal community platform (car sharing, student parties)</li> </ul>
<b>Sports</b>	<b>Scuba Diving</b> , certified Nitrox diver – CMAS 2 stars (30+ dives registered) <b>Sailing catamaran</b> <b>Gliding</b> (Sailplanes) <b>Mountain Hiking</b>