JOSEP CARNER

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EDUCATION

M.S. in Computer Science, New York University (NYU), New York   **(2017-2019)**
- Relevant coursework: Deep Learning, Machine Learning, Computer Vision and Artificial intelligence

Visiting Research Student at UC Berkeley, Berkeley   **(January 2016 - July 2016)**
- Develop bachelor thesis at Connectivity Laboratory with professor Jean Walrand in the field of Machine Learning and probabilistic models for Software Defined Networks

B.Sc. in Electrical Engineering, Universitat Politècnica de Catalunya (UPC), Barcelona   **(2011-2016)**
- Relevant coursework: signal processing, communication theory and systems, networks, stochastic processes and electronics
- Grade: 8.9/10 (Top 1%)
- Honors in: Calculus, Electromagnetic fields, Introduction to networks, Probability, Stochastic processes, Telematics services and applications, Radiation and propagation, Advanced digital communications, Antennas and microwaves, Microcontrollers, Optical communications, Advanced engineering project, Audio and video encoding, Data transmission protocols, Final thesis

B.Sc. in Computer Science, Universitat Politècnica de Catalunya (UPC), Barcelona   **(2011-2016)**
- Relevant coursework: artificial intelligence, machine learning, big data, computer vision, algorithms and computer graphics
- Grade: 8.9/10 (Top 2%)
- Honors in: Computer structure, Mathematics (II), Computer interfaces, Statistics, Computer architecture, Business management, Software engineering, Distributed computing, Advanced algorithms, Computer graphics, Logic for CS, Machine learning, Computer vision, Big data, Final thesis

AWARDS AND DISTINCTIONS

La Caixa Fellow, awarded full scholarship for M.S. at NYU   **(2017-2019)**
Best bachelor's thesis award from FIB, UPC   **(2016)**
Full scholarship for excellence from UPC (CFIS) to complete my bachelor's thesis at UC Berkeley   **(January 2016-June 2016)**
Full excellence scholarship for B.Sc. in Computer Science from UPC (CFIS)   **(2011-2016)**
Third prize in national oratory competition *Jóvenes a debate*   **(2012)**
Freshman year full academic excellence scholarship from the Government   **(2011)**
Distinctions and scholarships for academic outstanding in Spanish university entrance exams (*Selectivitat***) from the Government, Caixa Catalunya Bank and Rotary Club**   **(2011)**

WORK EXPERIENCE

Machine Learning Software Engineer at Skyscanner, London   **(September 2016-August 2017)**
- Focus in Machine Learning, large scale distributed systems, Big Data and Back End (Python, Java, AWS, Spark, Scala, Sklearn)
- Develop machine learning proof-of-concept models for next destination suggestion in high frequency business travelers
- Design and implement from scratch a scalable and production-ready engine for personalized filters recommendation in flight search service (~ 3.5 to 5 million users/day)

Software Engineering Intern at Skyscanner, Barcelona   **(June 2015-September 2015)**
- Focus in Full Stack software engineering (Python, Javascript, HTML, CSS)
- Optimize and refactor internal analytics dashboards to improve usability, coverage, design and efficiency
- Design and implement internal automation tools for pipeline execution, reducing overall time execution by 40 min.

RESEARCH EXPERIENCE

Research assistant at New York University with prof. Yann LeCun and prof. Kyunghyun Cho   **(September 2017 - Ongoing)**
- Research in Predictive Deep Learning models applied to self-driving cars project, partnership with NVIDIA

Research assistant at University of California Berkeley with prof. Jean Walrand   **(January 2016 - July 2016)**
- Research in Machine Learning based network modeling
- Develop "Knowledge-Defined Networking" paradigm, a ML-driven, more flexible, optimized and efficient networking paradigm
- Formalize specific networking ML models and study their capabilities and limits against Markov based traditional theoretical models
- Study the capacity of Machine Learning to infer hidden topologies and configurations in Software-Defined Networks throughout the observation of its input traffics and delays

CBI Challenge innovation at CERN   **(September 2014 - February 2015)**
- Build high-tech product to solve one of the most important modern concerns: food waste
- Lead, manage and execute technical implementation as principal engineer in a multidisciplinary and international team (8 people)
- Final prototype selected for international tech competition Cumulus Milan 2015 and reported on Financial Times, El País, La Vanguardia and TV3

Research assistant at Universitat Politècnica de Catalunya (UPC) with prof. Ricard Gavaldà   **(January 2014 - January 2015)**
- Research in data streaming models, matrix sketching, randomized algorithms for approximating large matrices and online computational methods
- Derive a new algorithm for Hankel Matrix construction in non-deterministic finite automaton by means of online observations, achieving significant time and space complexity improvement
- Build PCA online system based on frequent directions (Liberty 2012), accomplishing significant space complexity improvement

PUBLICATIONS

- Albert Mestres, Alberto Rodriguez-Natal, Josep Carner, Pere Barlet-Ros, Eduard Alarcón, Marc Solé, Victor Muntés, David Meyer, Sharon Barkai, Mike J Hibbett, Giovani Estrada, Khaldun Maruf, Florin Coras, Vina Ermagan, Hugo Latapie, Chris Cassar, John Evans, Fabio Maino, Jean Walrand, Albert Cabellos, "Knowledge-Defined Networking", ACM CCR 2017.

- Josep Carner, Albert Mestres, Eduard Alarcón, Albert Cabellos, "Machine Learning-based Network Modeling: An Artificial Neural Network Model vs a Theoretical Inspired Model", ICUFN 2017

TECHNICAL SKILLS

Core competences: Machine Learning, Deep Learning, Big Data, Computer Vision, Algorithms, Signal Processing and Mathematical models
Programming Languages and Frameworks: Python, Java, Apache Spark, AWS, Matlab, R, Javascript, Scala, C++, Tensorflow, Sci-kit learn

PROJECTS

National tech startup competition from Banco Santander (Second Prize) **(July 2016)**
- Lead, design and validate a business plan for iVision, a tech startup that aims to bring recent computer vision advances to personal security.

Founder and President of *Consell de Joves d'Igualada* **(2012 - 2014)**
- Empower youth through guidance, impact on academic decisions for future employment
- Address non-profit activities to young people in order to help, promote and develop their social and cultural projects
- Direct, organize and execute open city paintball, social poker competition and conference on the future of young people with former Catalan president Jordi Pujol, achieve schedule improvement for students in local public library

COURSES

Deep Learning, by Google (Udacity)	**(2017)**
Neural Networks for Machine Learning, by Geoffrey Hinton (Coursera)	**(2017)**
Convolutional Neural Networks for Visual Recognition, by Fei-Fei Li, A. Karpathy and J. Johnson (Stanford Online)	**(2017)**
Technological entrepreneurship (Stanford Online)	**(2017)**
Business and management (IESE)	**(2014)**
Machine learning, by Andrew Ng (Coursera)	**(2014)**
Business entrepreneurship (ESADE)	**(2013)**
Technical analysis and investment, by José Antonio Madrigal	**(2012)**

ORGANIZATIONS

Member of JCI Igualada (Junior Chamber International) **(2012 - 2013)**
- Positively impact our environment through the strengthening of entrepreneurial capabilities in young engaged people
- Organize and execute a non-profit food collection campaign, oratory competition and annual gala celebration

EXTRACURRICULAR ACTIVITIES

McKinsey Event Atrevete **(November 2013)**
- 28 selected students to work on a case study facing one of the most challenging problems in Spain: "Education, talent and jobs: the challenge of young people"

LANGUAGES

Catalan (proficient), Spanish (proficient), English (proficient), French (B2), German (B1)