INITIAL ENGINEER TRAINING IN COMPUTER SCIENCE

THEMATIC COURSE

HIGH PERFORMANCE COMPUTING / BIG DATA

HIGH PERFORMANCE ARCHITECTURE
PARALLEL PROGRAMMING
**STATISTICS LEARNING**
MANAGEMENT OF DATA FLOW
SIMULATION
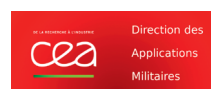
CONTACT

PIERRE DOSSANTOS-UZARRALDE
pierre.dossantos-uzarralde@ensiie.fr

PARTNERS
CEA

Atos

Teratec
AU CŒUR DES TECHNOLOGIES NUMÉRIQUES
AT THE HEART OF DIGITAL TECHNOLOGIES

idm
Industrial Data Analytics & Machine Learning

cea — Direction des Applications Militaires

VAN MAN « VANINOU » NGUYEN
CLASS OF 2017

I have decided to pursue the CIDM/HPC track out of a preference for "low-level" programming, computer hardware architecture, and performance. I am currently a PhD student at CEA, and my work focuses on optimizing parallel programs. This track offers numerous opportunities, whether in the research field at CEA, the industrial sector where there is a growing demand for cluster utilization, or in the world of startups.
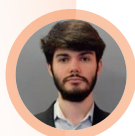
SYLVAIN « CLOUD » MARET
CLASS OF 2017

I joined ENSIIE with the intention of engaging in low-level computer programming, as well as having the opportunity to delve into machine learning or deep learning. The creation of the track coincided with my arrival and introduced me to work on computing systems, whether as a system administrator (LC, VC, ASE, RIAL), a data scientist (IPS, PSA), or a developer (PBT, PP). Additionally, the broad spectrum of the program allows for exploration of various careers in Big Data or DevOps roles. Today, I am a system administrator at Bull Atos within TGCC.

JOBS OPPORTUNITIES

HPC System Administrator
Business Intelligence Manager
Data Scientist
Chief Data Officer
Data Analyst
Engineer in Scientific Software Development
Master Data Manager
Research and Development
Lead Data Miner
Engineer in HPC System
Engineer in HPC Applicative Support

EXAMPLES OF INTERNSHIPS

Development of simulation codes
ESI, CEA, ONERA, CNRS

Development of process and compilation tools
Intel, IBM, Nvidia

Construction of HPC systems
Atos, IBM, CRAY

Utilization of HPC systems
EDF, Safran, Airbus, Total, L'Oreal, Michelin, Dassault, EADS, Air Liquide

THEMATIC COURSE
HIGH PERFORMANCE COMPUTING / BIG DATA

This course is set up for 2nd Year students at the ENSIIE.
The 3rd semester provides the necessary skills to enter the world
of Data, Data Science related to HPC Science and to the development
of methods and technics of massive parallel programming
(multi-core processor, graphic processor, supercomputer,
Cloud Computing). The goal of the 4th semester is to expose
students to the technics of high performance and massive parallel
programming by using a range of multi-core programming,
multi-thread or GPU libraries. The 5th semester is articulated
around advanced topics, specialised in the management
of Massive Data, particularly regarding Computer Science
Intelligence for analysis, regarding the exploration and visualisation
of Data, regarding the development of cloud systems
but also regarding machine learning methods.

ENSIIE
École nationale
supérieure
d'informatique
pour l'industrie
et l'entreprise

S3
Agile software development
Initiation to scientific programming
Parallel Programming
Exploitation System Architecture
Parallel Programming
Micro-architecture
or Regularized regression models

S4
Networks Administration
or Mathematical methods
for interpretable AI
Advanced Scientific
Programming
or Big Data platform engineering
Parallel Files Systems
Thread-based Parallelism
Data Centre/HPC Networks
Cluster Software

S5
Python for Data Science
Machine Learning
Simulation - Uncertainties
management
Advanced Compilation
Advanced statistical modelling

**ENSIIE
FIRST PLACE
IN 2022
IN THE RANKING
EDUNIVERSAL
OF TOP
ENGINEERING
SCHOOLS
SPECIALIZED
IN ARTIFICIAL
INTELLIGENCE,
DATA SCIENCE
POST-PREP**

EDUNIVERSAL
CLASSEMENT 2022
LICENCES BACHELORS
ET GRANDES ÉCOLES