

Nicolas Comte

PHD STUDENT - R&D ENGINEER · COMPUTER SCIENCE AND MODELING

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Experience

Inria (Grenoble-Alpes, team Morpheo), Anatoscope, Université Grenoble-Alpes

Grenoble, France

PHD STUDENT-R&D ENGINEER

2019 -

- Collaboration between Inria (Grenoble-Alpes, team Morpheo), Anatoscope and Grenoble Hospitals
- PhD subject: Learning Scoliosis Patterns using Anatomical Models and Motion Capture
- Design of models, registration and analysis tools from imaging and motion capture data.

Inria (French Institute for Research in Computer Science and Automation)

Lyon, France

R&D ENGINEER

2016 - 2018 (2 years)

- Creation of a new bioinformatics tool: Treerecs and contribution to existing softwares, especially Seaview, a multi-platform and graphical user interface for bioinformatics.
- Integration and improvements of existing algorithms.
- Create tests, continuous integration.
- Co-supervision of interns on software design.
- Teaching programming at INSA Lyon (48 cumulated hours), Bioinformatics and modelling studies (third year).

INSA de Lyon • Inria • Soladis

Lyon, France

INTERNSHIPS

2015-2016

- 2016 (6 months): creation of a model for the artificial evolution platform Aevol at the Inria team Beagle.
- 2015 (4 months): design of a R package and writing of a book about R programming (180 pages) at Soladis.

Extracurricular Activity

Team INSA-Lyon, IGEN 2014 competition

Lyon, France ; Boston, USA

BIOINFORMATICIAN R&D

2014

- The IGEN (for *International Genetically Engineered Machine*) is an international competition of synthetic biology organized in Boston. With our project Curly'on, we designed a bio-filter heavy-metals-specific which is created by genetically modified bacterias.
- Creation of simulation softwares, data analysis and modelling.
- Awards : *Gold Medal* and *Best Composite Part*

Formation

Université Grenobles Alpes

Grenoble, France

PHD IN COMPUTER SCIENCE

2020-

- Programming • Machine learning • Deep learning • Medical imaging • Anatomy • Biomechanics • Computer graphics

INSA Lyon

Lyon, France

INSA ENGINEER, BIOINFORMATICS AND MODELING STUDIES

2013-2016

- Programming • Data mining • Bioinformatics • Image processing • Statistics • Biomathematics (ODE, PDE, etc.) • Biology • Molecular biology

University of Lyon

Lyon, France

BACHELOR IN BIOLOGY, MATHEMATICS AND COMPUTER SCIENCES FOR LIFE SCIENCES STUDIES

2010-2013

- Bioinformatics • Programming • Statistics • Biomathematics • Biology • Molecular biology

Skills

languages	French (mother tongue), English (academic, toeic 895), Italian (notions)
Programming	C++, Python, Cython, Sofa, R, SAS, SQL, Git
Scientific computing	Machine learning, Computer vision, Statistics, Mathematical modeling, Bioinformatics
Communication	LaTeX, Beamer, HTML, Markdown, Inkscape, Gimp, Krita, Blender
Miscellaneous	Driving licence category B

Interests

Médiation scientifique chez DéMesures

Lyon, France

LABORATORY OF YOUNG RESEARCHERS FOR SCIENTIFIC POPULARIZATION AND COMMUNICATION.

October 2017 -

- Projects of communication between scientists and artists: ArtScience 2018-2019 (Lyon, France)
- Scientific popularization events: "Fête de la Science" 2017 and 2018 (Villeurbanne, France) ; Geek Touch 2018 (Lyon, France)

Staff Scientific events

Lyon, France

- R MEETING, 2013
- ECAL (European Conference in Artificial Life), 2017

2013, 2017

Other

DRAWING, DIGITAL PAINTING, PHOTOGRAPHY, CLASSICAL MUSIC

Honors

2023	Best Poster , IABM - French symposium in Artificial Intelligence in Biomedical Imaging	Paris, France
2014	Gold Medal and Best Composite Part , IGEM - International Genetically Engineered Machine competition	Boston, U.S.A

Scientific contribution

CONFERENCES

3D inference of the scoliotic spine from depthmaps of the back

Oral

N. COMTE, S. PUJADES, A. COURVOISIER, O. DANIEL, J.-S. FRANCO, F. FAURE, E. BOYER

2023

CMBBE - International Symposium on Computer Methods in Biomechanics and Biomedical Engineering

Multi-modal registration for Adolescent Idiopathic Scoliosis subject specific avatar creation

Poster

N. COMTE, S. PUJADES, A. COURVOISIER, O. DANIEL, J.-S. FRANCO, F. FAURE, E. BOYER

2023

CMBBE - International Symposium on Computer Methods in Biomechanics and Biomedical Engineering

Inference 3D du rachis depuis une carte de profondeur du dos

Poster

N. COMTE, S. PUJADES, A. COURVOISIER, O. DANIEL, J.-S. FRANCO, F. FAURE, E. BOYER

2023

IABM - Colloque Français en Intelligence Artificielle en Imagerie Médicale

Aevol-4b: Toward a new simulation platform to benchmark phylogenetic tools

N. COMTE, V. LIARD, C. KNIBBE & G. BESLON

2017

ALPHY (ALignments and PHYlogeny)

A 4-base model for the Aevol in-silico experimental evolution platform

V. LIARD, J. ROUZAUD-CORNABAS, N. COMTE & G. BESLON

2017

European Conference on Artificial Life

PUBLICATIONS

Multi-Modal Data Correspondence for the 4D Analysis of the Spine with Adolescent Idiopathic Scoliosis

N. COMTE, S. PUJADES, A. COURVOISIER, O. DANIEL, J.-S. FRANCO, F. FAURE, E. BOYER
Bioengineering, MDPI

2023

Seaview Version 5: A Multiplatform Software for Multiple Sequence Alignment, Molecular Phylogenetic Analyses, and Tree Reconciliation

M. GOUY, E. TANNIER, N. COMTE, D.P. PARSONS
Multiple Sequence Alignment: Methods and Protocols, Springer Protocols

2021

Treerecs: an integrated phylogenetic tool, from sequences to reconciliations

N. COMTE, B. MOREL, D. HASIC, L. GUÉGUEN, B. BOUSSAU, V. DAUBIN, S. PENEL, C. SCORNAVACCA, M. GOUY, A. STAMATAKIS, E. TANNIER, D.P. PARSONS
Bioinformatics

2020

RecPhyloXML: a format for reconciled gene trees

W. DUCHEMIN, G. GENCE, A.-M. ARIGON CHIFOLLEAU, L. ARVESTAD, M. S. BANSAL, V. BERRY, B. BOUSSAU, F. CHEVENET, N. COMTE, A. A. DAVÍN, C. DESSIMOZ, D. DYLUS, D. HASIC, D. MALLO, R. PLANEL, D. POSADA, C. SCORNAVACCA, G. SZÖLLŐSI, L. ZHANG, E. TANNIER, V. DAUBIN
Bioinformatics

2018