Serafeim Loukas

Data Scientist

Nationality: *Greek*
Swiss Work Permit: *G*
Marital Status: *Married*

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Professional experience

Jun 2021–Present **Research Scientist** University of Geneva & University Hospital of Bern, Switzerland.

- Employing Machine Learning, Data Science, Data Visualization methods for neuroscience research projects.
- Performing statistical, qualitative and quantitative analysis using Python & MATLAB.
- Supporting research by creating statistical & machine learning frameworks to answer research-specific scientific questions producing 6+ reliable and concrete project outcomes.
- Developing exceptional scientific writing and communication skills by summarized research results, preparing 10+ written reports and presentations in conferences.

Jun 2017–May 2021 **PhD Research Scientist** Swiss Federal Institute of Technology of Lausanne & University of Geneva, Switzerland.

- Mastered Machine Learning, Data Science, Data Visualization, Big Data, Statistics, Network Science, Graph Theory and programming in Python & MATLAB by successfully completing 6+ research projects.
- Supported research by creating statistical & machine learning frameworks to answer research-specific scientific questions producing 6+ reliable and concrete project outcomes.
- Performed statistical, qualitative and quantitative analysis for 4 years using Python & MATLAB.
- Developed exceptional scientific writing and communication skills by summarized research results, preparing 10+ written reports and presentations in conferences.
- Developed strong sense of teamwork by collaborating with all team members on various projects.
- Awarded the Summa Cum Laude Merit Award of outstanding work presented at the International Society for Magnetic Resonance in Medicine Annual Meeting 2020.

Jun 2017–May 2021 **Ambassador of the E3** Excellence in Engineering Summer internship program Swiss Federal Institute of Technology of Lausanne, Switzerland.

- Selected as one of the Ambassadors of the E3 – EPFL Excellence in Engineering Summer internship program among 200+ PhD students.
- Developed strong communication and management skills by establishing contact to promote the EPFL Excellence in Engineering Program with students worldwide.

Teaching experience

June 2017 - May 2021

- Created the lab exercises and used repetition, which enabled the students to grasp new mathematical concepts quickly.
- Developed strong management and collaboration skills by managing student learning objectives through personalized assistance, assignments and tests for 4 consecutive years.

Teaching for the courses:

- Image Processing I (MICRO-511)* & Image Processing II (MICRO-512)*
- Signal processing for functional brain imaging (MICRO-513)*
  ** Master courses at the Swiss Federal Institute of Technology Lausanne (EPFL)*

Education

Feb 2017–May 2021	**PhD in Electrical Engineering** Swiss Federal Institute of Technology Lausanne & University of Geneva, Switzerland. *- Dissertation: "Methods for functional connectivity and morphometry in neonatal neuroimaging to study neurodevelopment". Supervision* : Prof. Dimitri Van De Ville, Prof. Petra Hüppi. *- Keywords*: *Brain networks, Network science, Machine Learning, Signal Processing, Python, MATLAB, Big Data.*
Sep 2015–Feb 2017	**Master in Neuroscience (M.Sc.)** University of Geneva, Switzerland. *- Thesis: "Effective connectivity analysis of brain networks in preterm infants". Supervision* : Prof. Dimitri Van De Ville, Prof. Petra Hüppi. *- Keywords*: *Brain networks, Network science, Signal Processing, Python, MATLAB, Big Data.*
Sep 2010–July 2015	**Diploma in Electrical and Computer Engineering** 5 years program (300 ECTS), National Technical University of Athens, Greece. *- Thesis: "Analysis of biochemical phenotypes of the carotid atherosclerosis: Correlations with image-based and clinical indicators using clustering methods". Supervision* : Prof. Konstantina Nikita. *- Keywords*: *Clustering, Unsupervised Learning, Signal Processing, MATLAB*
Sep 2007–June 2010	**General Lyceum Certificate** Aristotelian General Lyceum, Corinth, Greece -Participation to the Panhellenic Exams 2009-2010, (19.242/20.000 points).

Awards and distinctions

- **"Summa Cum Laude Merit Award"** at the International Society for Magnetic Resonance in Medicine Annual Meeting (ISMRM) 2020.
- **"Best poster presentation award"**, Neuroscience Day (2016) at Campus Biotech, Geneva.

  Best poster award among 30 neuroscience posters
- **"Honorary Distinction"** (2010) by the Cultural Center of Corinth, Greece.

  Excellent lyceum student
- **"Honorary Distinction"** (2006-2007) by the Ministry Of Education, Greece.

  Excellent gymnasium student

Professional hobbies

May 2020–Present **Data Science Writer** Medium Corporation

- Mastered written communication and data visualization using matplotlib by creating and delivering 25+ high-quality scientific articles for Towards Data Science & AI In Plain English publication publishers.
- Covered most of the well-known machine learning topics & algorithms.
- Utilized exceptional writing, editing and proofreading skills to produce engaging and error-free content for 25+ articles.
- Profile: https://seralouk.medium.com/

Foreign Languages

Greek	**Native**
English	**Proficient User** - ETS TOEIC Certificate Of Achievement - Examination for the Certificate of Competency in English (ECCE), University of Michigan
French	**Intermediate User** - DELF A1 & A2, current level: B1-B2

Selected Publications & Presentations

Journal Papers

- **Loukas, S.***, Lordier, L.*, Grouiller, F., Vollenweider, A., Vasung, L., Meskaldij, D.-E., Lejeune, F., Pittet, M.P., Borradori-Tolsa, C., Lazeyras, F., Grandjean, D., Van De Ville, D., Hüppi, P.S., 2019. Music processing in preterm and full-term newborns: A psychophysiological interaction (PPI) approach in neonatal fMRI. NeuroImage 185, 857–864.
  DOI: https://doi.org/10.1016/j.neuroimage.2018.03.078
- Gui, L., **Loukas, S***., Lazeyras, F., Hüppi, P.S., Meskaldji, D.-E., Borradori Tolsa, C., 2019. Longitudinal study of neonatal brain tissue volumes in preterm infants and their ability to predict neurodevelopmental outcome. NeuroImage 185, 728–741.
  DOI: https://doi.org/10.1016/j.neuroimage.2018.06.034

Oral Presentations

- **Loukas, S.,** (2017). *"Music training enhances functional connectivity in preterm newborns"*, CIBM/BBL day 2017, Geneva, Switzerland
- **Loukas, S.,** (2019). *"Investigating the effects of an early intervention in preterm newborns: A resting-state functional connectivity study"*, ISMRM Annual Meeting 2019, Montreal, Canada

Conference Abstracts

- **Loukas, S.**, et al., (2020). "*Resting State Functional Connectivity and Angiogenesis-related Gene Co-Expression Networks in early brain development*", Proc. Intl. Soc. Mag. Reson. Med. 28, ISMRM, Montreal, Canada.
  (Link: https://index.mirasmart.com/ISMRM2020/PDFfiles/4588.html)
- **Loukas, S.**, et al., (2019). "*Investigating the effects of an early intervention in preterm newborns: A resting-state functional connectivity study*", Proc. Intl. Soc. Mag. Reson. Med. 27, ISMRM, Montreal, Canada.
  (Link: https://index.mirasmart.com/ISMRM2019/PDFfiles/0045.html)
- **Loukas, S.,** et al., (2018). "*Adaptive linear discriminant analysis for complex networks to study extreme prematurity and intrauterine growth restriction effects at school age*", Proc. Intl. Soc. Mag. Reson. Med. 26, ISMRM, Paris, France.
  (Link: https://index.mirasmart.com/ISMRM2018/PDFfiles/5214.html)

- **Loukas, S.**, et al., (2017). "*Music training enhances functional connectivity in preterm newborns*", Proc. Intl. Soc. Mag. Reson. Med. 25 (2017), ISMRM, Montreal, Canada.
(Link: http://indexsmart.mirasmart.com/ISMRM2017/PDFfiles/4103.html)

Skills, Softwares & Industry Knowledge

- **Industry Knowledge**: Data Science, Data Analytics, Data Visualization, Machine Learning, Statistical learning, Statistics & Probability, Research, Quantitative Analysis
- **Interpersonal Skills**: Communication, Collaboration / Teamwork, Critical thinking, Problem-solving, Supervision, Flexibility, Conflict Resolution
- **Operating Systems**: Windows XP, Vista, 7, 8, 10, and MacOS
- **Advanced user of Microsoft Office™**: Excel™, Word™, PowerPoint™, Access™, Outlook™, Teams
- **Adobe Acrobat** Writer and Reader
- **Web browsers**: Internet Explorer, Mozilla Firefox, Google Chrome, Safari, Opera
- **Basic Design** with AutoCAD by Autodesk
- **Advanced Programming knowledge** in Python, MATLAB, SQL, Bash (Unix shell)
- **Basic Programming knowledge** R Studio, JAVA, LabVIEW

Certifications

- *Certification of knowledge of IT application:*
MS Outlook 2002, **MS Access 2002**, **MS Power Point 2002**, **MS Excel 2002**, **MS Word 2002**
- *Certification of completion:* **Learning MATLAB** by Udemy
https://www.udemy.com/certificate/UC-Q2IYF22K/
- *Certification of completion:* **Python for beginners** by Udemy
https://www.udemy.com/certificate/UC-JVP0VU6B/
- *Certification of completion:* **Python for Data Science Essential Training** by LinkedIn
https://tinyurl.com/8w537rpc
- *Certification of completion:* **Python, ranking in the Top 10%** by TestDome
https://www.testdome.com/cert/234e51e1939b4415bd8b6bc07de745b6
- *Certification of completion:* **Insights on Data Science** by LinkedIn
https://tinyurl.com/7e4syy8m
- *Certification of completion:* **Applied Machine Learning in Python** by University of Michigan
https://www.coursera.org/account/accomplishments/certificate/N52WWPJGQTNY
- *Certification of completion:* **Statistical Data Visualization with Seaborn** by Coursera
https://www.coursera.org/account/accomplishments/certificate/9MG2WC7A6MHW

Fields of interest & Hobbies

- Machine Learning, Data Science & Data Visualization, Signal Processing, Programming
- Electrical Systems, Machineries and Devices, Automatic Control Systems
- **Hobbies**: Chess, Skiing, Basketball, Swimming, Reading scientific books, Writing articles about data science on Medium.