Serafeim Loukas

Nationality: *Greek*
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Education

Feb 2017–May 2021 **Doctor of Science (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, Connectomics, Network science, Machine Learning, Signal Processing, Python, MATLAB.*

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.*

Sep 2010–July 2015 **Diploma in Electrical and Computer Engineering** 5 years program, integrated master (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–Jun 2010 **General Lyceum Certificate** Aristotelian General Lyceum, Corinth, Greece
-Participation to the Panhellenic Exams 2009-2010, Excellent: 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

Research Experience

Jun 2021–Present **Postdoctoral 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 **Doctoral Research Scientist** - Swiss Federal Institute of Technology Lausanne & University of Geneva Lausanne & 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.

-Dissertation: "Brain connectomics: multivariate and predictive models for neurodevelopment".
-Keywords: Brain Connectomics, Network science, fMRI, Machine Learning, Signal Processing, Python, MATLAB, Big Data.

Teaching Experience

Jun 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)*

Other Professional Experience

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

- Published high-quality scientific articles for Towards Data Science & AI In Plain English publications.
- Utilized exceptional writing, editing and proofreading skills to produce engaging and error-free content for 25+ articles.
- Profile: https://seralouk.medium.com/

Jun 2017–May 2021 **Selected Ambassador of the E3 – EPFL Excellence in Engineering Summer internship program** EPFL, Geneva, Switzerland

- Developed strong communication and management skills by establishing contact to promote the EPFL Excellence in Engineering Program with students worldwide.

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

List of Publications & Presentations

Journal Papers

- **Loukas, S.***, Lordier, L.*, Meskaldij, D.-E., Filippa, M., Sa de Almeida, J., Van De Ville, D., Hüppi, P.S., 2021. Musical memories in newborns: A resting-state functional connectivity study. Human Brain Mapping 1-18 DOI: https://doi.org/10.1002/hbm.25677

- **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 Presentations

- **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, Virtual conference.
(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, Hawaii, USA.
(Link: https://cds.ismrm.org/protected/17MProceedings/PDFfiles/4103.html)

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

Skills

- **Industry Knowledge**: Data Science, Data Analysis & Visualization, Machine Learning, Statistical learning, Statistics & Probability, Research, Scientific Writing & Communication
- **Interpersonal Skills**: Communication, Teamwork, Problem-solving, Leadership, Responsibility, Flexibility, Conflict Resolution, Fast Learner
- **Operating Systems**: Windows XP / Vista / 7 / 8 / 10 and MacOS
- **Advanced user of Microsoft Office™:** Excel™, Word™, PowerPoint™, Access™, Outlook™
- **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, Unix (bash)
- **Basic Programming knowledge** in R Studio, C and Java

Fields of Interest & Hobbies

- Neuroscience, Graph Theory, Network Science, Data modeling, Bioengineering, Biomedical Engineering and Signal Processing.
- Machine Learning, Data Science & Data Visualization
- Electrical Systems, Machineries and Devices, Automatic Control Systems
- *Hobbies*: Chess, Skiing, Basketball, Swimming, Reading scientific books, Writing articles about data science on Medium.

References

- Upon request