






LIONEL VOIROL



CONTACT INFORMATION

Nationality: Swiss & Canadian
Prof. Email: Lionel.Voirol@unige.ch
Prof. Phone: +41 22 379 54 07
Prof. Address:
Bd du Pont d'Arve 40 (Uni Mail)
1205 Geneva,
Switzerland

 Google Scholar: [Lionel Voirol](#)
 GitHub: [lionelvoirol](#)
 LinkedIn: [Lionel Voirol](#)
 ORCID: [0000-0003-1696-1407](#)
 <https://lionelvoirol.com>

EDUCATION

Ph.D. in Statistics February 2020 - Present
University of Geneva, Geneva, Switzerland
Thesis co-advisors:
Prof. Maria-Pia Victoria-Feser & Prof. Stéphane Guerrier

M.Sc. in Business Analytics 2017 - 2019
University of Geneva, Geneva, Switzerland
Master's overall average: 5.44/6
Thesis: "*Implementing an Analytics Strategy in a SME: A call for Data Quality and Change Management*". Thesis grade: 6/6
Thesis supervisor: Prof. Diego Kuonen

B.Sc. in Economics & Management 2014 - 2017
University of Geneva, Geneva, Switzerland

Diploma of College Studies in Sociology & Administration 2012 - 2014
CEGEP Ahuntsic, Montreal, Canada

High School Diploma 2007 - 2012
Collège Regina Assumpta, Montreal, Canada

ACADEMIC POSITIONS

Ph.D. Candidate and Research & Teaching Assistant February 2020 - Present
Geneva School of Economics and Management,
University of Geneva, Geneva, Switzerland
Co-advisors: Prof. Maria-Pia Victoria-Feser & Prof. Stéphane Guerrier

Teaching Assistant July 2019 - July 2020
Geneva School of Economics and Management,
University of Geneva, Geneva, Switzerland
Principal Assistant for the Master in Business Analytics

Research Assistant 2015 - 2016
Faculty of Medicine, UIGP
University of Geneva, Geneva, Switzerland

Research Assistant 2013
Faculty of Medicine,
University of Montreal, Montreal, Canada

OTHER PROFESSIONAL EXPERIENCES

Personal Tutor in Mathematics, Statistics & Econometrics 2016 - 2022
Platform Apprentus & Personal canvassing

Principal Cook & Replacement Cook 2014 - 2018
Bull's Pub & Fishermen's Pub, Gland & Nyon, Switzerland

Assistant Muay Thai Coach & Strength and Conditioning Coach 2012 - 2014
APEX Martial Arts, Montreal, Canada

Replacement Cook 2013
La Gascogne, Montreal, Canada

Replacement Cook 2011 - 2013
Fou d'ici, Montreal, Canada

ARTICLES
UNDER REVIEW

1. **Voirol, L.**, Cucci, D. A., Karemera, M., Chu, W., Molinari, R. & Guerrier, S., “*Accounting for Vibration Noise in Stochastic Measurement Errors*”, Available on [arxiv](https://arxiv.org/abs/2303.18167).
doi: <https://doi.org/10.48550/arXiv.2303.18167>.

PUBLICATIONS

6. Wehrli, L., Galdadas, I., **Voirol, L.**, Cambet, Y., Guerrier, S., Smiesko, M., Gervasio, F., Nef, S. & Rahban, R., “*The action of physiological and synthetic steroids on the calcium channel CatSper in human sperm*”, *Frontiers in Cell and Developmental Biology* 11, (2023).
doi: <https://doi.org/10.3389/fcell.2023.1221578>.
5. Cucci, D. A., **Voirol, L.**, Khaghani, M. & Guerrier S., “*On Performance Evaluation of Inertial Navigation Systems: the Case of Stochastic Calibration*”, *IEEE Transactions on Instrumentation & Measurement* 72, (2023).
doi: <https://doi.org/10.1109/TIM.2023.3267360>.
4. Ramzy, G., Norkin, M., Koessler, T., **Voirol, L.**, Tihy M., McKee, T., Ris, F., Buchs, N., Delucinge-Vivier, C., Docquier, M., Rubbia-Brandt, L., Bakalli, G., Guerrier, S., Huelsken, J. & Nowak-Sliwinska, P., “*Platform combining statistical modeling and patient-derived organoids to facilitate personalized treatment of colorectal cancer*”, *Journal of Experimental & Clinical Cancer Research* 42, 79 (2023).
doi: <https://doi.org/10.1186/s13046-023-02650-z>.
3. **Voirol, L.**, Cucci, D. A., Kermarrec, G., Montillet, J.-P. & Guerrier, S., “*The Generalized Method of Wavelet Moments with eXogenous inputs: a fast approach for the analysis of GNSS position time series*”, *Journal of Geodesy* 97, 14 (2023).
doi: <https://doi.org/10.1007/s00190-023-01702-8>.
2. Pfarrwaller, E., **Voirol, L.**, Karemera, M., Guerrier, S. & Baroffio, A., “*Dynamics of career intentions in a medical student cohort: a four-year longitudinal study*”. *BMC Medical Education* 23, 131 (2023).
doi: <https://doi.org/10.1186/s12909-023-04102-w>.
1. Pfarrwaller, E., **Voirol, L.**, Piumatti, G., Karemera, M., Sommer, J., Gerbase, M., Guerrier, S. & Baroffio, A. “*Students’ intentions to practice primary care are associated with their motives to become doctors: a longitudinal study*”. *BMC Medical Education* 22, 30 (2022).
doi: <https://doi.org/10.1186/s12909-021-03091-y>.

CONFERENCE
PROCEEDINGS

1. **Voirol, L.**, Guerrier, S., Zhang Y., Karemera, M. & Radi A., “*Optimally Weighted Wavelet Variance-based Estimation for Inertial Sensor Stochastic Calibration*”, in 12th International Conference on Electrical Engineering, Cairo, Egypt, (2020).
doi: <https://doi.org/10.1109/ICEENG45378.2020.9171715>.

WORKING
PAPERS
(SELECTED)

5. Zhang, Y., **Voirol, L.**, Emile-Geay, J., & Guerrier, S., “*Uncertainty Quantification of Spectral Estimates in the presence of Uneven Sampling*”.
4. Balbinot, F., **Voirol, L.**, Karemera, M., Gerbase, M., Guerrier S. & Baroffio A., “*Determinants of empathy in medical students: A cross-sectional and cross-cultural study*”.
3. **Voirol, L.**, Victoria-Feser, M.-P. & Guerrier, S., “*Modelling Geophysical Processes with Complex Time dependence and Exogeneous Inputs: An Outlier-Robust and Computationally Fast Approach*”.
2. Guerrier, S., Heritier S., Victoria-Feser, M.-P. & **Voirol, L.**, “*Exact inference for studies with a small number of clusters*”.
1. Mili, N., Guerrier, S. & **Voirol, L.** “*Does extreme down-regulation of the Y chromosome play a role in the gender difference in liver cancer? A critical assessment.*”.

GRANTS

Funding obtained from the [Academic Society of Geneva](https://www.unige.ch/research/academic-society-of-geneva/) to support a conference presentation at the [Joint Statistical Meeting 2023](https://www.jstatmeeting.org/), (granted amount: 1300 CHF).

TALKS “The Generalized Method of Wavelet Moments with eXogenous Inputs”, in [Joint Statistical Meeting 2023](#), Session “Theory and methods for parameter estimation”, Toronto, Canada, (2023).

TEACHING
ACTIVITIES

TEACHING MATERIALS (WEBSITE WITH INTERACTIVE MATERIALS)

Skaloud, J., Guerrier, S., & **Voirol, L.** “Inference for Large-Scale Time Series with Application to Sensor Fusion”. More information: <https://gmwm.netlify.app/>.

Guerrier, S., **Voirol, L.** & Zhang, Y., “Introduction to Data Science with R”. More information: <https://intro-to-ds.netlify.app/>.

Guerrier, S., **Voirol, L.** & Zhang, Y., “Data Analytics for Pharmaceutical Sciences”. More information: <https://intro-data-analytics.netlify.app/>.

SUMMARY PER COURSE AS T.A. (UNIVERSITY OF GENEVA)

| | |
|--|--|
| “Mathematics I” | Fall 2023 |
| “Introduction to Data Science” | Spring 2023, Spring 2022, Spring 2021, Spring 2020 |
| “Modelling and Data Analysis for Pharmaceutical Science” | Spring 2023, Spring 2022 |
| “Introduction to Computational Statistics” | Spring 2022 |
| “Introduction to Statistics” | Spring 2021 |
| “Business Analytics” | Fall 2020 |
| “Forecasting with Applications in Business” | Fall 2019 |
| “Data Quality and Data Collection Strategies” | Fall 2019 |
| “Creating Value Through Data Mining” | Fall 2019 |

PEDAGOGICAL CERTIFICATION

Workshop in University Pedagogy January 2021
University of Geneva, Switzerland
Teaching and learning support centre (Pôle SEA)
Interactive training combining learning activities, micro-teaching and peer feedback on pedagogical topics such as oral communication, constructive feedback, pedagogical planning, interactive teaching methods and evaluation methods - Equivalent to 45 hours of university training

TEACHING RECOGNITION

Educational Innovations at University of Geneva awarded for the project “Web Application” for the class *Introduction to Data Science*, joint work with Guerrier, S. & Yuming, Z. More information [here](#).

Educational Innovations at University of Geneva awarded for the project “Interactive teaching” for the class *Modelling and Data Analysis for Pharmaceutical Science*, joint work with Guerrier, S., Gervasio, F. L., Galdadas, I., Insolia, L. & Yuming, Z. More information [here](#).

STUDENTS
MENTORING

Youssef Hellioui, M.Sc. in Pharmacy, “Study of the link between diet and disease based on a statistical analysis of biomarkers”. University of Geneva, 2021.

Thi Huong Quynh Nguyen, M.Sc. in Pharmacy, “Study of the impact of hormones from the hypothalamic-pituitary-adrenal axis and of testosterone on the regulation of inflammation based on a statistical analysis of biomarkers”. University of Geneva, 2022.

| | | | | | | | |
|--|---|--|-------------|--|-------------|---|-------------|
| CONTRIBUTIONS TO STATISTICAL SOFTWARE | <ol style="list-style-type: none"> 1. “gmwmx” - R package: Implement the Generalized Method of Wavelet Moments with Exogenous Inputs estimator (GMWXM) and provides functions to estimate times series models that can be expressed as linear models with correlated residuals such as those used to model Global Navigation Satellite System (GNSS) observations. More information: https://github.com/SMAC-Group/gmwmx. 2. “navigation” - R package: Allows the analysis of the impact of sensor error modeling on performance of integrated navigation (sensor fusion) based on IMU, GPS and barometer data. More information: https://github.com/SMAC-Group/navigation. 3. “simts” - R package: Contains various tools for time series analysis. Indeed, this R package provides a series of tools to simulate, plot, estimate, select and forecast different time series models. It is originally conceived as a support to the online textbook “<i>Applied Time Series Analysis with R</i>”. Available on CRAN, downloads \approx 6K/year. More information: https://github.com/SMAC-Group/simts. 4. “avar” - R package: Implements the allan variance and allan variance linear regression estimator for time series models. Available on CRAN, downloads \approx 6K/year. More information: https://github.com/SMAC-Group/avar. 5. “gmwm” - R package: Provides a computationally efficient implementation of the estimators introduced in Guerrier et al. (2013). Downloads \approx 5K/year. More information: https://github.com/SMAC-Group/gmwm. | | | | | | |
| REFERENCES | <p><i>Letter of Recommendation Available upon Request</i></p> <p>Prof. Maria-Pia Victoria-Feser, Full Professor of Statistics, Geneva School of Economics and Management, University of Geneva, Switzerland, Maria-Pia.VictoriaFeser@unige.ch.</p> <p>Prof. Stéphane Guerrier, Assistant Professor of Statistics, Geneva School of Economics and Management, University of Geneva, Switzerland, Stephane.Guerrier@unige.ch.</p> <p>Prof. Roberto Molinari, Assistant Professor of Statistics, Auburn University, United States, robmolinari@auburn.edu.</p> <p>Prof. Diego Kuonen, Adjunct Professor of Statistics, Geneva School of Economics and Management, University of Geneva, Switzerland, Diego.Kuonen@unige.ch.</p> | | | | | | |
| COMMUNITY INVOLVEMENT | <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Trinity International Residential School Construction volunteer Tirunelveli, India</td> <td style="text-align: right; vertical-align: top;">Summer 2012</td> </tr> <tr> <td>CLSC de Bordeaux-Cartierville Animator for elderly - 90 hours of attested community involvement Montreal, Canada</td> <td style="text-align: right; vertical-align: top;">Summer 2011</td> </tr> <tr> <td>Accueil Bonneau Cook and handy man - More than 120 hours of attested community involvement Montreal, Canada</td> <td style="text-align: right; vertical-align: top;">2010 - 2011</td> </tr> </table> | Trinity International Residential School Construction volunteer Tirunelveli, India | Summer 2012 | CLSC de Bordeaux-Cartierville Animator for elderly - 90 hours of attested community involvement Montreal, Canada | Summer 2011 | Accueil Bonneau Cook and handy man - More than 120 hours of attested community involvement Montreal, Canada | 2010 - 2011 |
| Trinity International Residential School Construction volunteer Tirunelveli, India | Summer 2012 | | | | | | |
| CLSC de Bordeaux-Cartierville Animator for elderly - 90 hours of attested community involvement Montreal, Canada | Summer 2011 | | | | | | |
| Accueil Bonneau Cook and handy man - More than 120 hours of attested community involvement Montreal, Canada | 2010 - 2011 | | | | | | |
| PERSONAL SKILLS | <p>Language French: Mother tongue English: Fluent</p> <p>Computer Skills Extensive experience with R, Python, Bash, Git, L^AT_EX Good Experience with C++, SQL, Matlab, PowerBI, FileMaker, Statistica</p> | | | | | | |
| COMPETITIVE SPORT ACHIEVEMENTS | <p>Thai boxing: Competed at a semi-professional and professional level around Europe and did multiple training camps in Thailand. 3rd place at ICO World championship in Stuttgart (2015), winner of the European WFC title in Milan (2016), winner of the WMO professional title in Bangkok (2017), last fight in November 2022 at the Memorial Jorge Martins 16, Martigny, Switzerland (win by decision).</p> | | | | | | |
| DATE | February 12, 2024 | | | | | | |