

CURRICULUM VITAE

CARL MAXIMILIAN MILLER

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MOBILE

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PROFILE

Date of birth

October 2nd, 1984
Muenchberg
Germany

Nationality

German

Marital status

single

LANGUAGES

German

Mother tongue

English

Business fluent

Spanish

Fluent

PROGRAMMING

Java, Python, R, JS
MySQL, HTML, PHP

Docker / Singularity

Cluster computing:
SGE, SLURM, Cloud
Computing

Web-Services / API

WORK EXPERIENCE

Post-Doctoral Associate (since 01/2018)

Molecular patterns of disease; Variant effect prediction
Technical University Munich / Rutgers University

Research Assistant, PhD (since 10/2015)

Protein function in the context of genetic diseases
Technical University Munich / Rutgers University

Research Assistant (10/2013 - 10/2015)

Evolutionary trace of protein structure
LFE Bioinformatik, LMU, Munich, Germany; Prof. Ralf Zimmer

IT-Consulting ROKundCO GmbH (2009 - 2012)

Munich, Germany

Student Research Assistant (10/2006 - 04/2007)

LFE Bioinformatics, Munich, Germany

Student Trainee IT (09/2006 - 04/2007)

Fred Butler (Linde Gas), Munich, Germany

Internship IT (06/2006 - 09/2006)

Fred Butler (Linde Gas), Munich, Germany

PUBLICATIONS

10. **Miller, M.**, Vitale, D., Kahn, P., Rost, B., & Bromberg, Y. (2019). fuNTRp: Identifying protein positions for variation driven functional tuning. *bioRxiv*, 578757. <https://doi.org/10.1101/578757>. NAR (*in press*)

9. Voskanian, A., . . . , **Miller, M.**, . . . , Kann, M. G. *et al.* (2019). Assessing the performance of in-silico methods for predicting the pathogenicity of variants in the gene CHEK2, among Hispanic females with breast cancer. *Hum Mutat*. doi:10.1002/humu.23849

8. Pejaver, V., . . . , **Miller, M.**, . . . , Bromberg, Y. *et al.* (2019). Assessment of methods for predicting the effects of PTEN and TPMT protein variants. *Hum Mutat*. doi:10.1002/humu.23838

7. Monzon, A. M., . . . , **Miller, M.**, . . . , Tosatto, S. C. E *et al.* (2019). Performance of computational methods for the evaluation of Pericentriolar Material 1 missense variants in CAGI-5. *Hum Mutat*. doi:10.1002/humu.23856

6. **Miller, M.**, Wang, Y., Bromberg, Y. (2019). What went wrong with variant effect predictor performance for the PCM1 challenge. *Human Mutat.*, doi:10.1002/humu.23832

5. **Miller M.**, Vitale D., Rost B., Bromberg Y., fuNTRp: Identifying protein positions for variation driven functional tuning. *bioRxiv* 578757; doi: <https://doi.org/10.1101/578757> (*in peer-review at NAR*)

4. **Miller, M.**, Bromberg, Y., & Swint-Kruse, L. (2017). Computational predictors fail to identify amino acid substitution effects at rheostat positions. *Scientific Reports*, 7, 41329

3. **Miller, M.**, Zhu, C. & Bromberg, Y. (2017). clubber: removing the bioinformatics bottleneck in big data analyses. *Journal of Integrative Bioinformatics*, 14(2), pp. -. Retrieved 9 Nov. 2017, from doi:10.1515/jib-2017-0020

2. Zhu, C., Mahlich, Y., **Miller, M.**, Bromberg, Y. (2017). fusionDB: assessing microbial diversity and environmental preferences via functional similarity networks. *Nucleic Acids Res.* gkx1060, doi:10.1093/nar/gkx1060

1. Zhu, C., **Miller, M.**, Marpaka, S., Vaysberg, P., Rühlemann, MC., Heinsen, F-A., Tempel, M., Lieb, W., Franke, A., Bromberg, Y. (2017). Functional sequencing read annotation for high precision microbiome analysis. *Nucleic Acids Res.* gkx1209, doi:10.1093/nar/gkx1209



STUDIES

PhD (Dr. rer. nat) Bioinformatics (1/2016 - 3/2018)

Technical University Munich (TUM), Munich, Germany & Rutgers University (RU), New Jersey, Thesis: "*Functional profiles of health: elucidating genetics and microbiome of human disease*" (passed)

Master-Studies Bioinformatics Grade 1.4 (4/2009 - 3/2012)

Ludwig-Maximilians-University (LMU) / Technical University Munich (TUM) Germany, Thesis: "*Context-based prediction of protein binding strength*" (1.0)

Bachelor-Studies Bioinformatics at LMU/TUM Munich (10/2005 - 3/2009)



Talks & Presentations

ISMB 2019 (Basel)

Intelligent Systems for Molecular Biology, Oral presentation & Poster

ISMB 2018 (Chicago)

Intelligent Systems for Molecular Biology, Oral presentation

ISMB 2017 (Prague)

Intelligent Systems for Molecular Biology, Oral presentation

IB 2017 (Denmark)

International Symposium on Integrative Bioinformatics Oral presentation



EXPERIENCES ABROAD

Round-the-world trip (05/2012 - 09/2013)

including South America, the Caribbean, USA, Pacific Islands, Australia, New Zealand, Central-/South-east-Asia, Nepal, India, China, South Africa

Development aid in Bolivia (10/2004 bis 01/2005)

South America, Institution: Hostelling International



EXTRACURRICULAR ACTIVITIES

Member and Board of L'Ensemble Medical at LMU Munich (2010 - 2012)

Management and organization, worldwide tours including Israel, Italy, USA

Co-Founder, manager and guitarist of the band Plan B (2005 - 2009)

Management, (show) concepts, and musical arrangements
(www.band-plan-b.com)

Internationally known choir: Augsburgers Domsingknaben (1993 - 2005)

National and international tours, CD productions and opera participations