Michael Seo

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EDUCATION

University of Bern — Bern, Switzerland
Ph.D. Biostatistics and Epidemiology — *2019 - 2022*

Stanford University — Stanford, CA
M.S. Statistics; GPA: 3.7/4.0 — *2012 - 2014*

Duke University — Durham, NC
B.S. Statistics, Graduation with High Distinction; GPA: 3.7/4.0 — *2007 - 2011*

EXPERIENCE

Institute of Social and Preventive Medicine, University of Bern — Bern, Switzerland
Ph.D. Student in Biostatistics and Epidemiology — *2019 - 2022*

- **Variable selection and shrinkage**: Compared variable selection and shrinkage methods for estimating patient-specific treatment effects in individual patient data meta-analysis.
- **Real-world effectiveness**: Developed models that combine individual patient data from randomized controlled trials and observational studies when aiming to predict outcomes for a set of treatments.
- **Missing data**: Explored methods of addressing the systematically missing predictors problem, when the aim is to build a prediction model using data from multiple studies.

LLX Solutions — Boston, MA
Biostatistician — *2018 - 2019*

- **Study design**: Drafted statistical analysis plans for Phase I trials which address study designs and methods on how to evaluate safety of the new drug in development.
- **Data manipulation**: Transformed raw clinical data into datasets that meet FDA standards using PROC SQL.

Center for Evidence Synthesis in Health, Brown University — Providence, RI
Ph.D. Student in Biostatistics — *2015 - 2017*

- **Network meta-analysis**: Developed an R package for Bayesian network meta-analysis which allows simultaneous comparison of multiple treatments.
- **N-of-1 clinical trial**: Developed a Bayesian statistical tool to analyze single patient trials with crossover design and applied it to give individualized recommendations of carbohydrate diet for patients with inflammatory bowel disease.

PUBLICATIONS

- **Research Publication**: **Seo M**, Furukawa TA, Karyotaki E, Efthimiou O (2023). Developing prediction models when there are systematically missing predictors in individual patient data meta-analysis, 1-13. *Research Synthesis Methods*

- **Research Publication**: **Seo M**, Debray TPA, Ruffieux Y, Gsteiger S, Bujkiewicz S, Finckh A, Egger M, Efthimiou O (2022). Combining individual patient data from randomized and non-randomized studies to predict real-world effectiveness of interventions. *Statistical Methods in Medical Research*, 31, 1355-1373.

- **Research Publication**: **Seo M**, White IR, Furukawa TA, Imai H, Valgimigli M, Egger M, Zwahlen M, Efthimiou O (2021). Comparing methods for estimating patient-specific treatment effects in individual patient data meta-analysis. *Statistics in Medicine*, 40, 1553-1573.

- **Research Publication**: **Seo M**, Furukawa TA, Veroniki AA, Pillinger T, Tomlinson A, Salanti G, Cipriani A, Efthimiou O (2021). The Kilim plot: A tool for visualizing network meta-analysis results for multiple outcomes. *Research Synthesis Methods*, 12, 86-95.

- **R Package**: **Michael Seo** (2022). bipd: Bayesian Individual Patient Data Meta-Analysis using 'JAGS'. R package version 0.3. https://CRAN.R-project.org/package=bipd.

- **R Package**: **Michael Seo** and Christopher Schmid (2020). bnma: Bayesian Network Meta-Analysis using 'JAGS'. R package version 1.5.0. https://CRAN.R-project.org/package=bnma.

- **R Package**: Robert Tibshirani, **Michael Seo**, Gil Chu, Balasubramanian Narasimhan, and Jun Li (2018). samr: Significance Analysis of Microarrays. R package version 3.0. https://CRAN.R-project.org/package=samr.

SKILLS

- **Programming**: R, Python, SAS, SQL, C++, Java, LaTeX
- **Statistics**: Bayesian Methods, (Network) Meta-Analysis, Machine Learning