

Valentin Vancak

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Curriculum Vitae

ACADEMIC APPOINTMENTS

Lecturer, Department of Data Science, Holon Institute of Technology (HIT), Israel 2023 – present

Postdoctoral researcher, Biostatistics group, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden 2021 – 2023

Supervisor: Prof. Arvid Sjölander.

Research topics: G-estimators (Instrumental variables)

EDUCATION

Complementary courses, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm 2021

Courses: Introduction to Causal Inference, Advanced Causal Inference

Ph.D. in Statistics, University of Haifa 2014 – 2020

Dissertation title: Systematic Analysis of the Number Needed to Treat

Supervisors: Prof. Yair Goldberg (Technion); Prof. Stephen Z. Levine (Univ. of Haifa)

Complementary courses for PhD studies (Technion & Univ. of Haifa) 2013 – 2014

MA in Statistics (*cum laude*), University of Haifa 2010 – 2013

Thesis title: Continuous Statistical Models – With or Without Truncation Parameters?

Supervisor: Prof. Yair Goldberg

BA in Statistics (*cum laude*) and **Economics**, University of Haifa 2007 – 2010

PUBLICATIONS

1. O. Elior, V. Vancak, H. Moshieff (2026), Student difficulties with discipline-oriented programming of R, *Discover Education*, 5(826).
2. V. Vancak, A. Sjölander (2025), Definition, identification, and estimation of the direct and indirect number needed to treat, *Epidemiologic Methods*, 14(1), 20250018
3. V. Vancak, A. Sjölander (2024), Estimation of the Number Needed to Treat, the Number Needed to Expose, and the Exposure Impact Number with Instrumental Variables, *Epidemiologic Methods*, 13(1), 20230034
4. V. Vancak, A. Sjölander (2023), A. Sensitivity analysis of G-estimators to invalid instrumental variables. *Statistics in Medicine*. 42(23), 4057–4299
5. V. Vancak, Y. Goldberg, S.Z. Levine (2022). The Number Needed to Treat Adjusted for Explanatory Variables and Survival Analysis: Theory and Application, *Statistics in Medicine*, 41(17), 3299–3320
6. V. Vancak, Y. Goldberg, S.Z. Levine (2021). Guidelines to Understand and Compute the Number Needed to Treat, *Evidence-Based Mental Health*, 24, 131–136
7. V. Vancak, Y. Goldberg, S.Z. Levine (2020). Systematic Analysis of the Number Needed to Treat, *Statistical Methods in Medical Research*, 29, 2393–2410

8. V. Vancak, Y. Goldberg, S.K. Bar-Lev, B. Boukai (2015). Continuous Statistical Models – With or Without Truncation Parameters?, *Mathematical Methods of Statistics*, 24, 55–73

UNDER REVIEW

1. O. Elior, V. Vancak (2026), Evaluating LLMs as Graders in Programming Courses, *Education and Information Technologies*, under review

WORKING PAPERS

1. V. Vancak, G. Caliskan, The Number Needed to Treat: Definition, Estimation, Pitfalls, and Extensions
2. V. Vancak, R. Atias, V. Kazhdan, Software Library and Web Application for Calculation of the Direct and Indirect NNT, NNE, and EIN

EDITORIAL AND PEER-REVIEW SERVICE

Editorial Service

Reviewing Editor, Springer Nature Reviewer Community Board 2026 – present

Peer-Review service

Statistical Methods in Medical Research
 Statistics in Medicine
 Pharmaceutical Statistics
 Biometrical Journal
 Value in Health
 BMC Infectious Diseases
 BMC Medical Research Methodology
 Türkiye Klinikleri Journal of Biostatistics
 Journal of Clinical Epidemiology
 Nature Human Behaviour
 European Journal of Medical Research
 Health Services and Outcomes Research Methodology
 Scientific Reports

RESEARCH GRANTS

Early-Career Research Grant, HIT (PI) 2025 – 2026
 Project: “Software Library and Web Application for Calculation of the Direct and Indirect NNT, NNE, and EIN”. Budget: 40,000 NIS

SCHOLARSHIPS AND PRIZES

- 2024–2025: Outstanding Faculty Member, Department of Data Science, HIT
- 2023–2024: Outstanding Faculty Member, Department of Data Science, HIT

- 2024: Travel grant (1,600 USD) from the Hebrew University of Jerusalem to present the paper *Students' Difficulties with the Disciplinary Study of R* at the Royal Statistical Society International Conference, Brighton, United Kingdom
- 2023: The paper "The Number Needed to Treat Adjusted for Explanatory Variables and Survival Analysis: Theory and Application" was recognized as the Top Downloaded Article (during its first 12 months of publication in *Statistics in Medicine*)
- 2021: The paper "Guidelines to Understand and Compute the Number Needed to Treat" was selected as Editor's Choice of *EBMH* vol. 24, issue 4
- 2018: The paper "Systematic Analysis of the Number Needed to Treat" was awarded the Ernst Prize (1,200 NIS), a conference participation award, Ernst Fund, 10th Conference of the EMR-IBS
- 2015: Outstanding teacher, Netanya Academic College
- 2011, 2013, 2014: Outstanding teacher, Dean of Students, University of Haifa
- 2012: Scholarship for excellence in studies in MA (5,000 NIS), The Graduate Studies Authority, University of Haifa
- 2011: Graduate Studies Scholarship (5,000 NIS), University of Haifa & Municipality of Haifa
- 2010: Scholarship for excellence in studies in BA (5,000 NIS), The Graduate Studies Authority, University of Haifa

TEACHING EXPERIENCE

Lecturer

2024 –	Holon Institute of Technology	
	<i>Dept. of Data Science</i> Statistical Learning (M.Sc.) Causal Inference (M.Sc.) Python programming for DS (pre-M.Sc.)	<i>Dept. of Ind. Engineering and Management</i> Intro. to Programming with Python (B.Sc.) Statistical Methods for Data Analysis (B.Sc.) Python for Data Science (B.Sc.) Research Methods and Regression (B.Sc.)

Adjunct lecturer

2020 – 2026	The Hebrew University of Jerusalem	
	<i>Dept. of Psychology</i> R programming for psychology research (BA; 2020 – 2025) Introduction to R programming (BA; 2022 – 2024) <i>Robert H. Smith Faculty of Agriculture, Food and Environment</i> Introduction to Programming with Python (B.Sc.; 2026 -)	
2023	Karolinska Institutet	
	<i>Dept. of Learning, Informatics, Management and Ethics</i> Intermediate Medical Statistics: Regression Models 2738 (Ph.D.; Co-lecturer)	
2016 – 2022	University of Haifa	
	<i>Dept. of Evolutionary and Environmental Biology (2022)</i> Statistical Modeling with R (M.Sc. & Ph.D., English)	

	<i>Dept. of Economics (2016–2017)</i> Introduction to Linear Models (BA)	<i>PhD honours program in Social Sciences (2017–2020)</i> Statistical Modeling with R (Eng & Heb)
Teaching Assistant		
2022 – 2023	Karolinska Institutet <i>Dept. of Medical Epidemiology and Biostatistics</i> Introduction to R programming 2958 (Ph.D.) Extensions to the design and analysis of case-control studies 5577 (Ph.D.)	
2014 – 2021	Braude College of Engineering <i>Dept. of Ind. Engineering & Management</i> Statistics and Probability Stochastic Models in Operation Research	<i>Dept. of Mathematics</i> Linear Algebra Univariate Calculus Multivariate Calculus Advanced Multivariate Calculus Advanced Linear Algebra
2014 – 2015	Netanya Academic College <i>School of Insurance</i> Calculus I Calculus II	
2010–2014, 2016–2021	University of Haifa <i>Dept. of Economics</i> Introduction to Probability Introduction to Statistics Introduction to Linear Models <i>Dept. of Information Systems</i> Introduction to Statistics <i>Dept. of Multidisciplinary Studies</i> Introduction to Statistics (Grader)	<i>Dept. of Statistics</i> Probability I Probability II Mathematical Statistics Statistical Models I (SAS & R) Statistical Models II (R) Stochastic Models Math. and Stats. Methods (MA Logistics) Prob. and Stoch. Processes (MA Logistics) Generalized Linear Models (MSc Stats) Stochastic Processes (Eng Int. MSc) High-Dim. Data Analysis (Eng Int. MSc) Multivariate Analysis (Grader) Applied Statistics I (Eng Int. MSc; Grader) SAS Programming <i>Faculty of Management (MBA)</i> Quantitative Methods

OTHER ACADEMIC ACTIVITIES

2010 – 2015	Part-time freelance statistical consultant (Medicine, Political Science, Econ) Research assistant of Prof. S. Z. Levine, Dept. of Public Mental Health, Univ. of Haifa
2014	Research assistant of Prof. Doron Kliger, Dept. of Economics, Univ. of Haifa Research field: Finance and Econometrics. Proofreader of Kliger, D. & Gurevich, G. (2014) <i>Event Studies for Financial Research: A Comprehensive Guide</i> . Springer
2014, 2015	Instructor, computer skills workshop, Dean of Students, Univ. of Haifa
2010–2016	Private tutor on behalf of the Students' Dean

ACADEMIC AND PROFESSIONAL SERVICE

Management Committee Member, COST Action CA25124 (MAGNET): Multidisciplinary Adaptations of GAMLSS NETwork	2026 – present
Chair, Department Teaching Committee, Department of Data Science	2026 – present
Department IT Coordinator, Department of Data Science	2025 – present
M.Sc. Final Projects Coordinator, Department of Data Science	2025 – present
Academic advisor, Dept. of Data Science	2025 – present
Management Committee Member, COST Action CA24151 (PERCC): Towards PERsonalized Cancer Chronotherapy	2025 – present
Member of the Admissions Committee, M.Sc. in Data Science, HIT	2024 – present
Co-organizer of the Biostatistics group day at MEB	2022
Cofounder and coordinator of the weekly research seminar for graduate students, Dept. of Statistics, Univ. of Haifa	2014 – 2015

COMPUTER SKILLS

R, Python, L^AT_EX, SAS, Mathematica

SOFTWARE

R-package: `nntcalc`: NNT calculator <https://github.com/vancak/NNTcalculator>
R-shiny app: <https://vvancak.shinyapps.io/NNTcalculator>

INVITED, CONTRIBUTED AND SEMINAR TALKS, AND POSTERS

The Number Needed to Treat: Definition, Estimation, Pitfalls, and Extensions

2026	Royal Statistical Society International Conference	Bournemouth, UK
2026	Public Health Agency of Sweden: Folkhälsomyndigheten	Online

Definition, Identification, and Estimation of the Direct and Indirect Number Needed to Treat

2025	Royal Statistical Society International Conference	Edinburgh, UK
2025	MEB Biostatistics seminar, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet	Stockholm, Sweden
2025	Nordic-Baltic Biometric Society Conference	Oslo, Norway
2024	IMS International Conference on Statistics and Data Science	Nice, France
2024	Royal Statistical Society International Conference (poster)	Brighton, UK

Students' Difficulties with the Discipline-Oriented Teaching of R

2024	Royal Statistical Society International Conference (RFT)	Brighton, UK
Estimation of the Number Needed to Treat, the Number Needed to Expose, and the Exposure Impact Number with Instrumental Variables		
2024	Annual European Causal Inference Meeting (poster)	Copenhagen, Denmark
2024	Statistics seminar, Dept. of Statistics and Operation Research, Tel Aviv University	Tel Aviv, Israel
Estimation of the Number Needed to Treat with Instrumental Variables		
2023	MEB Biostatistics seminar, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet	Stockholm, Sweden
2023	Young Statisticians Meeting	Leicester, UK
Sensitivity Analysis of G-estimators to Invalid Instrumental Variables		
2023	Conference of the Nordic-Baltic Region of the IBS	Göteborg, Sweden
2023	Israel Statistical Association annual meeting	Tel Aviv, Israel
2022	FMS-DSBS Biennial joint meeting of the Swedish Medical Statistics Society and the Danish Society for Biopharmaceutical Statistics	Malmö, Sweden
2022	MEB Biostatistics seminar, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet	Stockholm, Sweden
2022	Israel Statistical Association annual meeting (poster)	Tel Aviv, Israel
The Number Needed to Treat Adjusted for Explanatory Variables in Regression and Survival Analysis		
2022	Clalit Research Institute - Innovation Division, Clalit Health Services	Zoom
2021	MEB Biostatistics seminar, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet	Stockholm, Sweden
2021	Seminar on Optimization, Algorithms, and Applications, Braude College of Engineering	Karmiel, Israel
2020	Annual Haifa International Social Science Workshop for Graduate Students	Haifa, Israel
Systematic Analysis of the Number Needed to Treat		
2019	Ph.D. Students Statistics seminar, Tel Aviv University	Tel Aviv, Israel
2018	Conference of the Eastern Mediterranean Region of the IBS	Jerusalem, Israel
2018	Statistics Seminar, Dept. of Statistics, Univ. of Haifa	Haifa, Israel
Continuous Statistical Models—With or Without Truncation Parameters?		
2014	Statistics Seminar, Dept. of Statistics, Univ. of Haifa	Haifa, Israel