Immanuel Trummer

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OVERVIEW

Immanuel Trummer is assistant professor for computer science at Cornell University. His research focuses on databases and data analysis, in particular on optimization and planning problems that arise in this context. His publications were selected for “Best of VLDB”, for "Best of SIGMOD", for the ACM SIGMOD Research Highlight Award, and for publication in CACM as CACM Research Highlight.

ACADEMIC CAREER

2016-Present	**Assistant Professor for Computer Science** *Cornell University, Ithaca (NY), USA*
2010-2016	**PhD Student in Computer Science** *Advisor: Christoph Koch* *EPFL, Lausanne (VD), Switzerland*
2003-2010	**Double Diploma in Computer Science & Engineering** *University of Stuttgart (Germany) & Ecole Centrale de Nantes (France)*

AWARDS and HONORS

- Recipient of a Google grant for COVID-19 AI and Data Analytics Projects 2020
- Publication selected for Best of SIGMOD 2019
- PI of NSF-1910830 ("Regret-Bounded Query Evaluation via Reinforcement Learning")
- Recipient of Google Faculty Research Award 2018
- Publication selected as CACM Research Highlight
- Jim Gray Dissertation Award, Honorable Mention
- Recipient of Google Faculty Research Award 2016
- Selected for ACM SIGMOD Research Highlight Award 2015
- Invitation to publish in “Best of VLDB 2015” (VLDB Journal)

SELECTED PUBLICATIONS

- **AAAI 2022.** Procrastinated tree search: black box optimization with delayed, noisy, and multi-fidelity feedback. *Junxiong Wang, Debabrota Basu, Immanuel Trummer.*
- **PVLDB 2022.** CodexDB: synthesizing code for query processing from natural language instructions using GPT-3 Codex. *Immanuel Trummer.*
- **PVLDB 2022.** BABOONS: black-box optimization of data summaries in natural language. *Immanuel Trummer.*
- **PVLDB 2022.** From BERT to GPT-3 Codex: harnessing the potential of very large language models for data management. *Immanuel Trummer.*
- **CIDR 2022.** Towards NLP-enhanced data profiling tools. *Immanuel Trummer.*
- **SIGMOD 2022.** DB-BERT: a database tuning tool that “reads the manual”. *Immanuel Trummer.*

- **TODS 2021.** SkinnerDB: regret-bounded query evaluation via reinforcement learning. *Immanuel Trummer, Junxiong Wang, Ziyun Wei, Deepak Maram, Samuel Moseley, Saehan Jo, Joseph Antonakakis, Ankush Rhayabhari.*
  "Best of SIGMOD" Edition.
- **PVLDB 2021.** UDO: universal database optimization via reinforcement learning. *Junxiong Wang, Immanuel Trummer, Debabrota Basu.*
- **PVLDB 2021.** Robust voice querying with MUVE: optimally visualizing results of phonetically similar queries. *Ziyun Wei, Immanuel Trummer, Connor Anderson.*
- **PVLDB 2021.** The case for NLP-enhanced database tuning: towards tuning tools that "read the manual". *Immanuel Trummer.*
- **IEEE Data Engineering Bulletin 2021.** WebChecker: towards an infrastructure for efficient misinformation detection at Web scale. *Immanuel Trummer.*
- **SIGMOD Record 2021.** Database tuning using natural language processing. *Immanuel Trummer.*
- **ICDE 2021.** Optimally summarizing data by small fact sets for concise answers to voice queries. *Immanuel Trummer, Connor Anderson.*
- **PVLDB 2020.** Scrutinizer: a mixed-initiative approach to large-scale, data-driven claim verification. *Georgios Karagiannis, Mohammed Saeed, Paolo Papotti, Immanuel Trummer.*
- **PVLDB 2020.** Mining an "anti-knowledge base" from Wikipedia updates with applications to fact checking and beyond. *Georgios Karagiannis, Immanuel Trummer, Saehan Jo, Shubham Khandelwal, Xuezhi Wang, Cong Yu.*
- **CIDR 2020.** BitGourmet: deterministic approximation via optimized bit selections. *Saehan Jo, Immanuel Trummer.*
- **SIGMOD 2019.** SkinnerDB: regret-bounded query evaluation via reinforcement learning. *Immanuel Trummer, Junxiong Wang, Deepak Maram, Samuel Moseley, Saehan Jo, Joseph Antonakakis.* **Selected for Best of SIGMOD.**
- **SIGMOD 2019.** Verifying text summaries of relational data sets. *Saehan Jo, Immanuel Trummer, Weicheng Yu, Xuezhi Wang, Cong Yu, Daniel Liu, Niyati Mehta.*
- **SIGMOD 2019.** Exact cardinality query optimization with bounded execution cost. *Immanuel Trummer.*
- **SIGMOD 2019.** A holistic approach for query evaluation and result vocalization in voice-based OLAP. *Immanuel Trummer, Yicheng Wang, Saketh Mahankali.*
- **CIDR 2019.** Data vocalization with CiceroDB. *Immanuel Trummer.*

TEACHING

- CS 4320: Introduction to database systems
- CS 4321: Practicum in database systems
- CS 6320: Advanced database systems
- CS 7390: Seminar in database systems

SERVICE

- Associate Editor of SIGMOD 2024
- Associate Editor of SIGMOD Record
- Co-chair of VLDB 2022 demo track