

# Database Architectures

Centrum Wiskunde &amp; Informatica

*Who  
Is  
Who*

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Boncz**  
(senior)



**Stefan  
Manegold**  
(senior)



**Hannes  
Mühleisen**  
(senior)



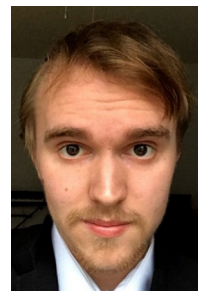
**Tavneet  
Singh**  
(Msc student)



**Pedro  
Holanda**  
(post-doc)



**Nantia  
Makrynioti**  
(post-doc)



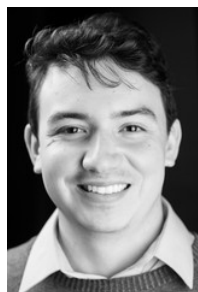
**Mark  
Raasveldt**  
(post-doc)



**Gábor  
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(post-doc)



**Azim  
Afroozeh**  
(PhD student)



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Kuiper**  
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Nerone**  
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**Orson  
Peters**  
(PhD student)



**Dean  
De Leo**  
(ex.  
PhD student)

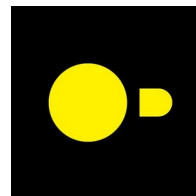


**Benno  
Kruit**  
(ex.  
PhD student)

- Fundamental system-oriented database data-systems architecture research
- Advance database technology to address large-scale data management challenges in (data) science
- Building & maintaining ready-to-use open-source systems (+spin-offs):



<https://www.monetdb.org/>  
<https://www.monetdbolutions.com/>



<https://duckdb.org/>  
<https://duckdblabs.com/>

- Hardware-efficiency: architecture, data structures, algorithms, **implementation**
- Embedable data management for ad-hoc exploratory data analysis
- Single-node efficiency (also) in the cloud
- Efficient and scalable graph data management
- Indexing, compression, sorting, grouping aggregation
- Fair benchmarking & reproducibility (=> Open Science)

- **Industry grants & collaboration partners:**
  - Relational AI
  - Databricks (Spark)
  - Actian (Vectorwise)
  - Facebook / Meta
  - Ursa Labs / Ursa Computing / Voltron Data (Apache Arrow)
- **NWO Smart Industry:** combining data management, analytics & optimization
- **NWO:** Evolving Large Graphs
- ***Open: NWO Large-Scale Research Infrastructure !??***
- **ACM SIGMOD/PODS 2019:** <http://www.sigmod2019.org/>
- **Conf. on Innovative Data Systems Research 2020, 2023, ...:** <http://cidrdb.org/>
- **Linked Data Benchmarking Council:** <https://ldbouncil.org/>
- **Dutch Seminar on Data Systems Design:** <https://dsdsd.da.cwi.nl/>

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Centrum Wiskunde & Informatica

Speed  
&  
Scalability

