ARIANNE MEIJER - VAN DE GRIEND

QUANTUM SOFTWARE RESEARCHER

I am a **Ph.D. student** researching quantum software for NISQ devices at the University of Helsinki. Currently, I am not actively looking for a position, but I am open for various internship opportunities as part of my studies. Moreover, I will be searching for a job or post-doc for after my Ph.D. in **2025**.
My practical experience comes from my work at many different companies and I have worked on multiple quantum papers (see **publications**).
Additionally, I am in the **secretary** of the IEEE SA P2995 working group on quantum algorithm standards.

Ph.D. student Computer Science

at
University of Helsinki
Finland

PERSONALIA

Arianne Meijer - van de Griend
Espoo, Finland
Dutch
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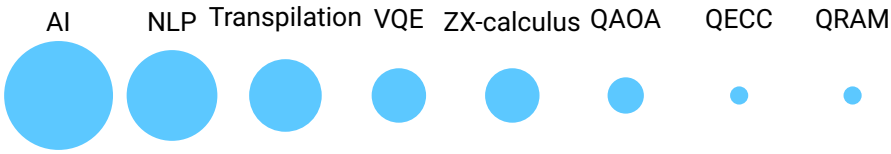
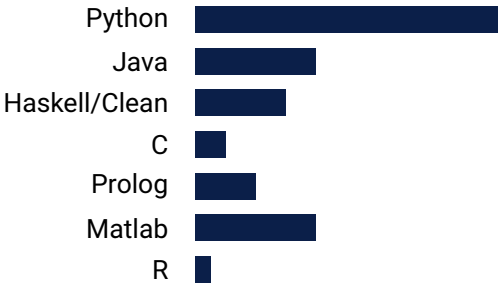
SKILLS AND TECHNOLOGIES

Relative expertise:



LANGUAGES

Relative expertise, in order of preference:



English (professional)
Dutch (native)
German (intermediate)
Finnish (Beginner)

ACTIVITIES

I love to challenge myself both creatively and intellectually. I particularly enjoy combining established techniques in new ways. This can easily be seen in my crafts.

Or in the words of Spoonboy from the Matrix (1999):
Do not try and think outside the box, that's impossible. Instead, only try to realize the truth... There is no box.

Puzzling
Baking
Swimming
Knitting
Beat Saber
Miniature painting

EXPERIENCE

01/2021 - 12/2024	:	**Salaried doctoral candidate, University of Helsinki, Helsinki (Finland)** *Researching NISQ software. Supervisors: Jukka K. Nurminen and Sabrina Maniscalco.*
08/2020 - 12/2020	:	**Project researcher, University of Turku, Turku (Finland)** *Researching quantum computing algorithms in particular VQE.*
10/2019 - 04/2020	:	**Research scientist, Cambridge Quantum Computing, Cambridge (United Kingdrom)** *Working on t|ket> i.e. researching quantum compiling techniques.* [7]
04/2019 - 08/2019	:	**AI Master thesis, Radboud University, Nijmegen (the Netherlands)** *Investigated the use of deep reinforcement learning for compiling quantum circuits. Supervisors: Aleks Kissinger (RU) and Johan Kwisthout (RU). Grade: 9/10.* [6]
01/2019 - 03/2019	:	**Teaching assistant quantum computing, Radboud University, Nijmegen (the Netherlands)** *Researched a compiling technique for quantum computers and wrote an paper about it.* [2]
06/2018 - 11/2018	:	**Graduation internship Computing Science, Machine2Learn, Amsterdam (the Netherlands)** *Researched natural language generation in the form of a chatbot and language style transfer. Supervisors: Tom Heskes (RU) Wouter Oosterheert (Machine2Learn).* [5]
09/2017 - 02/2018	:	**Internship Artificial Intelligence, Simon, Eindhoven (the Netherlands)** *Created an automatic invoice processor. Supervisors: George Kachargis (RU) Martha Larson (RU) Erik van Breusegem (SIMON). Grade: 8.5/10.*
08/2016 - 02/2017	:	**Junior data scientist, Anchormen, Amsterdam (the Netherlands)** *Worked on several Data Science and AI projects.*
03/2016 - 08/2016	:	**Graduation Internship Artificial Intelligence, RadboudUMC, Nijmegen (the Netherlands)** *Used kinship verification for syndrome diagnosis. Supervisors: Marco Wiering (RuG) Jayne Hehir-Kwa (RadboudUMC) Hamdi Dibeklioglu (TU Delft).*
05/2015 - 08/2015	:	**Graduation Internship Computer Science, Atos, Groningen (the Netherlands)** *Used text mining for predictive maintenance on Atos' computer network. Supervisors: Michael Biehl (RuG) Marco Aiello (RuG) Mark Niemeijer (Atos).*

EDUCATION

01/2021 - 12/2024	:	**Computer Science PhD, University of Helsinki, Helsinki (Finland)** *Researching NISQ software.*
09/2016 - 08/2019	:	**Master Artificial Intelligence, Radboud University, Nijmegen (the Netherlands)** *Judicium: Cum Laude (i.e. graduated with distinction)*
11/2015 - 06/2019	:	**Master Computing Science, Radboud University, Nijmegen (the Netherlands)**
09/2013 - 01/2019	:	**Bachelor Artificial Intelligence, University of Groningen, Groningen (the Netherlands)**
09/2011 - 10/2015	:	**Bachelor Computer Science, University of Groningen, Groningen (the Netherlands)**

PUBLICATIONS

[1] Massimo Equi, Arianne Meijer-van de Griend, and Veli Mäkinen. "From Bit-Parallelism to Quantum: Breaking the Quadratic Barrier". In: *arXiv preprint arXiv:2112.13005* (2021).

[2] Aleks Kissinger and Arianne Meijer-van de Griend. "CNOT circuit extraction for topologically-constrained quantum memories". In: *Quantum Information and Computation* 20.7&8 (2020), pp. 581–596.

[3] Adriana Meijer - van de Griend and Jukka K Nurminen. "QuantMark: A benchmarking API for comparing VQE algorithms". In: *IEEE Transactions on Quantum Engineering* (2022), pp. 1–1. DOI: 10.1109/TQE.2022.3159327.

[4] Arianne Meijer - van de Griend and Sarah Meng Li. "Dynamic qubit allocation and routing for constrained topologies by CNOT circuit re-synthesis". In: *arXiv preprint arXiv:2205.00724* (2022). To appear in proceedings of QPL 2022 conference.

[5] Arianne Meijer-van de Griend. *Constrained quantum CNOT circuit re-synthesis using deep reinforcement learning*. UNPUBLISHED, Master thesis Artificial Intelligence. 2019. ResearchGate: RG.2.2.11886.77125.

[6] Arianne Meijer-van de Griend. *Natural language generation for commercial applications*. UNPUBLISHED, Master thesis Computing Science. 2018. ResearchGate: RG.2.2.21953.10087.

[7] Arianne Meijer-van de Griend and Ross Duncan. "Architecture-aware synthesis of phase polynomials for NISQ devices". In: *arXiv preprint arXiv:2004.06052* (2020). To appear in proceedings of QPL 2020 conference.