



Profile

A mathematically oriented wireless/NTN engineer with PhD-level expertise in LEO networks, stochastic geometry, and signal processing. 6+ years and proven track record of R&D experience in building simulation tools and algorithms to analyze interference, SIR/SINR, channel modeling, coverage, and routing for 3GPP NTN systems. Proficient in making sense of raw data and communicating it to the audience and stakeholders. Participated in projects tied to VTT and the European Space Agency. Looking to apply my NTN/LEO performance analysis and simulation expertise to solve real-world problems in the fast-paced industry/startups. I am motivated, ambitious, and a quick learner with a broad mathematical toolbox.

Core Skills

Languages/Tools	PYTHON, C++, JAVA, C, OCTAVE, MATLAB, MATHEMATICA, GIT, L ^A T _E X, Linux operating system. Spoken languages: Native Finnish , fluent in English , good in Swedish , beginner in Spanish .
Domains	LEO/NTN comms, stochastic geometry, spatial and temporal channel fading models, SINR/SIR, interference, and other performance metrics, routing, ML for signal processing, constellation design.
Practices	Simulation design, algorithm prototyping, data analysis, stakeholder coordination, technical writing.

Experience and impact (hyperlinks in red)

- 5/2025- **Project Researcher**, *Aalto University*, Department of Electrical Engineering, Espoo, Finland
- 9/2025 - Managed an R&D article project [1]: drove on-campus collaboration to deliver a spatio-temporal interference and ALOHA MAC analysis for LEO/NTN networks. - Built/maintained simulation code in MATLAB and OCTAVE.
Impact: - Derived a tractable interference correlation function enabling more efficient ML-based signal processing, including NTN channel responses and GPR signal estimation for 3GPP NTN and satellite imaging applications.
- 8/2023- **Visiting Researcher**, *University of Notre Dame*, Department of Electrical Engineering
- 2/2024 - Designed and implemented simulation framework (MATLAB, MATHEMATICA) for 3GPP LEO uplink SIR meta-distribution, enabling systematic exploration of constellation densities and terrestrial interference effects on link performance [2]. - Coordinated a distributed team (co-authors across institutions), handled the full delivery pipeline (simulation, analysis, documentation, peer review) to publication in IEEE Transactions on Communications.
Impact: - Identified an optimal LEO constellation density that maximizes average throughput and quantified the trade-off between throughput and performance consistency, providing actionable guidance for dense LEO network design.
- 05/2019- **PhD Researcher**, *Aalto University*, Signal Processing of Wireless Networks, Espoo, Finland
- 05/2025 - Conceived and executed an R&D project plan on cutting-edge NTN research [1],[2],[3],[4],[5],[6],[7],[8]. - Built and maintained a multi-language simulation stack (PYTHON, MATLAB, OCTAVE, MATHEMATICA) including algorithms for analysis, simulation, and visualization, used across several research projects. - Secured competitive research **grants**. - Presented results to external audiences [2], [6]. - **Supervised** junior researchers.
Impact: - Laid novel stochastic geometry framework for analysis of NTN networks, reducing the simulation time in the order of magnitude hours to minutes compared to existing simulation tools [4]. - Developed and evaluated successive interference cancellation (SIC) algorithms that improved coverage performance by up to 900 percent in simulations, demonstrating the potential for substantial capacity gains in dense NTN deployments [8].

Education

- 2025 **Doctor of Science (PhD) (thesis in pre-examination)**, *Aalto University*, Signal Processing for 5G/6G/LTE/3GPP/NTN/LEO communications, stochastic geometry analysis and simulation.
- 2018 **MSc**, *Univ. of Helsinki*, Applied Analysis. PDEs, finite element method (FEM), antenna theory.
- 2016 **BSc**, *Univ. of Helsinki*, Applied Analysis. Optimal control theory, system performance optimization.

References

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