

# References

## 3rd Party Sources / Recommended Reading

- R. Boutaba et al. “**A comprehensive survey on machine learning for networking: evolution, applications and research opportunities**”. J Internet Serv Appl 9, 16 (2018).
- M. A. Ridwan, N. A. M. Radzi, F. Abdullah and Y. E. Jalil, “**Applications of Machine Learning in Networking: A Survey of Current Issues and Future Challenges**,” in IEEE Access 2021
- Marios Evangelos Kanakis, Ramin Khalili, and Lin Wang. **Machine Learning for Computer Systems and Networking: A Survey**. ACM Comput. Surv. 55, 4, Article 71, April 2023
- O. Onireti, S. Oteafy, J. Thompson. “**A Survey of Machine Learning Techniques Applied to Self-Organizing Cellular Networks**” IEEE Communications Surveys & Tutorials, 2019
- S. Hussain, R. Saeed, F. Abbas. “**Machine Learning in 5G/B5G Mobile Networks: A Comprehensive Survey**”. IEEE Access, 2020
- M. Alsabah, S. Alrabeiah, M. Alwakeel. **Artificial Intelligence in 5G and Beyond: A Survey and Perspective on Enabling Technologies, Applications, and Open Research Challenges**. 2021
- P. Casas “**Two Decades of AI4NETS – Challenges & Research Directions**” in 5th IEEE/IFIP International Workshop on Analytics for Network and Service Management (AnNet), 2020.
- Michael Schapira. “**AI for networking, and networking for AI**”. The Networking Channel, 2023. Available at <https://www.youtube.com/watch?v=i6DvbfIUPSg>.
- Andrew Ng. “**Machine Learning**”. Stanford Online. Available at <https://youtu.be/vStJoetOxJg?si=irOCJjd5n-872uKI>

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## Author Publications / Further Reading

- Stadler, R., Pasquini, R., & Fodor, V. (2017). Learning from network device statistics. *Journal of Network and Systems Management*, 25, 672-698.
- de Araújo, P. L., Carneiro, M. G., Contreras, L. M., & Pasquini, R. (2024). MTP-NT: A Mobile Traffic Predictor Enhanced by Neighboring and Transportation Data. *IEEE Transactions on Network and Service Management*.
- de Almeida, L. C., da Silva, W. R. D., Tavares, T. C., Pasquini, R., Papagianni, C., & Verdi, F. L. (2024). DESiRED—Dynamic, Enhanced, and Smart iRED: A P4-AQM with Deep Reinforcement Learning and In-band Network Telemetry. *Computer Networks*, 244, 110326.
- Donatti, A., Correa, S. L., Martins, J. S., Abelem, A. J., Both, C. B., de Oliveira Silva, F., ... & Carvalho, T. C. (2023). Survey on Machine Learning-Enabled Network Slicing: Covering the Entire Life Cycle. *IEEE Transactions on Network and Service Management*, 21(1), 994-1011.
- de Almeida, L. C., da Silva, J. L., Lins, R. P., Maciel Jr, P. D., Pasquini, R., & Verdi, F. L. (2023, May). Wave-um gerador de cargas múltiplas para experimentação em redes de computadores. In *Anais Estendidos do XLI Simpósio Brasileiro de Redes de Computadores e Sistemas Distribuídos* (pp. 9-16). SBC.

# References

## Author Publications / Further Reading

- "A Framework for QoS and QoE Assessment of Encrypted Video Traffic with 4G and 5G Open Datasets".
- "Soft Failure Localization Using Machine Learning with SDN-based Network-wide Telemetry"
- "Demonstration of ML-assisted Soft-Failure Localization Based on Network Digital Twins"
- "DNN-based QoT Estimation Using Topological Inputs and Training with Synthetic-Physical Data"
- "Chat-IBN-RASA: Building an Intent Translator for Packet-Optical Networks based on RASA".
- "When Digital Twins Meet Optical Networks Operations".
- "A supervised Machine Learning approach for DASH video QoE prediction in 5G networks"
- "Machine learning assisted real-time DASH video QoE estimation technique for encrypted traffic".
- "Machine Learning Approach to Estimate Video QoE of Encrypted DASH Traffic in 5G Networks"
- "EFFECTOR: DASH QoE and QoS Evaluation Framework For EnCrypTed videO tRaffic"
- "Predicting XR Services QoE with ML: Insights from In-band Encrypted QoS Features in 360-VR"
- "QoEyes: Towards Virtual Reality Streaming QoE Estimation Entirely in the Data Plane"
- "Machine Learning-Assisted Closed-Control Loops for Beyond 5G Multi-Domain ZeroTouch Networks".
- "Harnessing UAVs for Fair 5G Bandwidth Allocation in Vehicular Communication via Deep Reinforcement Learning".
- "Machine Learning for NextGeneration Intelligent Transportation Systems: A Survey"
- "The role of Machine Learning in Fluid Network Control and Data Planes"
- "MTP-NT: A Mobile Traffic Predictor Enhanced by Neighboring Transportation Data"
- "Transfer of Deep Reinforcement Learning for Cloud Service's Elasticity"

# Datasets

- Rafael Pasquini. GitHub. <https://github.com/rafaelpasquini>
- Patrick L. Araújo. GitHub.  
<https://github.com/PatrickLdA/milan-telecom-analysis>
- Ian Resende. GitHub. [https://github.com/iansmps/dissertation\\_repo](https://github.com/iansmps/dissertation_repo)
- Leandro Almeida. GitHub. <https://github.com/leandrocalmeida>
- SMARTNESS ERC. GitHub.  
<https://github.com/smartness2030/hackathon5G/tree/main/datasets>
- Raza Ul Mustafa, Christian Esteve Rothenberg, Chadi Barakat, “YouTube goes 5G: Benchmarking YouTube in 4G vs 5G”, IEEE Dataport, doi: <https://dx.doi.org/10.21227/h00h-ew92>. Dec., 2022.

# Credits

Pedro Casas (slide courtesy + talk recordings) [Alumni UdelaR]: <https://bigdama.ait.ac.at/pcasas/>

- **DEEP in the NET – Deep Learning for Network Monitoring and Analysis**  
PhD Course, 10th TMA PhD School, the Netherlands 2022.  
1 – Introduction to Deep Learning for TMA  
2 – Deep Learning Basics

## 3 – Introduction to Graph Neural Networks

- **AI4NETS – AI/ML for Performance**  
Tutorial, 38th IFIP 1 – Performance



<https://bigdama.ait.ac.at/>



<http://mobiqoe.ait.ac.at/>

- 1 – Performance
- 2 – Performance
- 3 – Performance
- 4 – Performance

## 5 – Other Learning Topics

- <https://www.youtube.com/watch?v=B5PmsGYOZ04>
- <https://www.youtube.com/watch?v=rjkEI9c5jtE>
- <https://www.youtube.com/watch?v=rjkEI9c5jtE>

*Thanks*

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