

# Rui Yuan

🔗 : <https://rui-yuan91.github.io/> ✉ : [yy42606r@gmail.com](mailto:yy42606r@gmail.com)

LOOKING FOR A RESEARCH SCIENTIST/POSTDOC POSITION

STARTING IN EARLY 2023 IN *REINFORCEMENT LEARNING AND OPTIMIZATION*

## PROFESSIONAL EXPERIENCE

---

Meta AI (formerly Facebook AI Research), Meta, France 2019 - 2022

Institut Polytechnique de Paris, Télécom Paris, France 2019 - 2022

Industrial Ph.D. student at Meta AI and Télécom Paris (Ph.D. expected in Mar. 2023)

**Thesis Director:** François Roueff (Télécom Paris)

**Advisors:** Robert M. Gower (Flatiron Institute) and Alessandro Lazaric (Meta AI)

**Interests:** Reinforcement learning, Large-Scale Stochastic Optimization, Machine learning

## EDUCATION

---

École Polytechnique, France 2017 - 2018

**M.Sc.** in Data Science

École Polytechnique, France 2012 - 2015

Engineering Degree, **M.Sc.** in Applied Mathematics

**Rank 1** French engineering schools

Lycée Janson de Sailly, Paris, France 2010 - 2012

Classes préparatoires (equivalent to **B.Sc.** in Mathematics and Physics)

Intensive courses of Mathematics, Physics and Computer Science leading to the nationwide highly competitive exam for admission to a graduate-level engineering school (“Grande Ecole”)

## PUBLICATIONS

---

1. Carlo Alfano, **Rui Yuan**, Patrick Rebeschini. A Novel Framework for Policy Mirror Descent with General Parametrization and Linear Convergence. Preprint, 2023.
2. **Rui Yuan**, Simon S. Du, Robert M. Gower, Alessandro Lazaric, Lin Xiao. Linear Convergence of Natural Policy Gradient Methods with Log-Linear Policies. Accepted at *International Conference on Learning Representations (ICLR)*, 2023.
3. **Rui Yuan**, Alessandro Lazaric, and Robert M. Gower. Sketched Newton-Raphson. Accepted at *Society for Industrial and Applied Mathematics (SIAM) Journal on Optimization (SIOPT)*, 2022.
4. **Rui Yuan**, Robert M. Gower, and Alessandro Lazaric. A general sample complexity analysis of vanilla policy gradient. Accepted at *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022.
5. Jiabin Chen\*, **Rui Yuan**\*, Guillaume Garrigos, Robert M Gower. SAN: Stochastic Average Newton Algorithm for Minimizing Finite Sums. Accepted at *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022.

\*Equal contributions.

## ACADEMIC SERVICE

---

### Reviewer for:

Neurips 2022, ICML 2022, AISTATS 2022, Neurips 2021 ([Outstanding Reviewer Award given to the top 8% of reviewers](#)), Symposium on Foundations of Computer Science (FOCS) 2020, SIAM Journal on Scientific Computing (SISC)

## PRESENTATIONS

---

### Scientific Talks

*A general sample complexity analysis of vanilla policy gradient.*

- Invited talk at International Conference on Continuous Optimization (ICCOPT), Jul. 26th 2022  
Lehigh University, Bethlehem, Pennsylvania, USA

*Sketched Newton-Raphson.*

- Invited talk at Workshop on Scientific Computing and Optimization, Dec. 13th 2020  
University of Hong Kong, online

### Posters

*Linear Convergence of Natural Policy Gradient Methods with Log-Linear Policies.*

- 15th European Workshop on Reinforcement Learning (EWRL 2022), Sep. 20th 2022  
Politecnico di Milano, Milan, Italy

*A general sample complexity analysis of vanilla policy gradient.*

- ICML 2021 Workshop on “Reinforcement learning theory”, online Jul. 24th 2021

*SAN: Stochastic Average Newton Algorithm for Minimizing Finite Sums.*

- 3rd PRAIRIE/MIAI AI summer school (PAISS), online Jul. 8th 2021

*Sketched Newton-Raphson.*

- ICML 2020 Workshop on “Beyond first-order methods in ML systems”, online Jul. 17th 2020

## PROJECTS

---

I have contributed to the theorem proving project at Meta AI, which results in the following publications:

1. HyperTree Proof Search for Neural Theorem Proving
2. Draft, Sketch, and Prove: Guiding Formal Theorem Provers with Informal Proofs

## SKILLS AND TOOLS

---

- **Programming:** Python (master - Numpy, PyTorch, scikit-learn, scipy, pandas, Keras ...), LEAN, JavaScript, HTML, CSS (Bootstrap), Java, R, Matlab, CAML, SQL.
- **Tools:** Sublime Text (master), Git (master), LaTeX (master), tmux, macOS, Linux, web servers.
- **Languages Spoken:** Mandarin (Native), Cantonese (Native), French (Full working proficiency), English (Full working proficiency)

## HOBBIES

---

Accordion: 5 years; Basketball: 11 years; Skiing: 10 years; Badminton: 2 years; Jogging: 2 years