Research in AI, ML & SWE

Contents

1 Prominent Authors

1.1 Foundational AI and Deep Learning Pioneers

- **Geoffrey Hinton** – University of Toronto and Google DeepMind
- **Yoshua Bengio** – University of Montreal
- **Yann LeCun** – Meta (Facebook AI Research) and New York University

1.2 Reinforcement Learning and Decision Intelligence

- **Richard Sutton** – University of Alberta and DeepMind
- **David Silver** – DeepMind
- **Pieter Abbeel** – University of California, Berkeley

1.3 Probabilistic Models, Causality, and Statistical ML

- **Judea Pearl** – University of California, Los Angeles
- **Zoubin Ghahramani** – University of Cambridge and Google DeepMind
- **Michael Jordan** – University of California, Berkeley

1.4 Computer Vision and Generative Models

- **Ian Goodfellow** – Apple (formerly Google Brain)
- **Fei-Fei Li** – Stanford University
- **Sergey Levine** – University of California, Berkeley

1.5 Natural Language Processing (NLP)

- **Christopher Manning** – Stanford University
- **Jacob Devlin** – Google Research
- **Tomas Mikolov** – Czech Academy of Sciences (formerly Google)

1.6 Transformers and Large Language Models

- **Ashish Vaswani** – Co-author of "Attention Is All You Need"
- **Noam Shazeer** – Co-founder of Character.AI (formerly Google)
- **Oriol Vinyals** – DeepMind

1.7 AI Ethics, Fairness, and Societal Impact

- **Timnit Gebru** – Distributed AI Research Institute (DAIR)
- **Joy Buolamwini** – MIT Media Lab

1.8 Foundational Contributors

- **Barry Boehm** – Known for the Spiral Model and Constructive Cost Model (COCOMO).
- **David L. Parnas** – Introduced information hiding and modular design principles.
- **Watts S. Humphrey** – Pioneer of software process improvement and the Capability Maturity Model (CMM).
- **Fred Brooks** – Author of "The Mythical Man-Month"; led IBM System/360 and OS/360 projects.

1.9 Software Architecture and Design

- **Mary Shaw** – Early advocate of software architecture as a discipline.
- **David Garlan** – Co-developer of software architecture frameworks and architectural styles.
- **Grady Booch** – Co-creator of UML and Object-Oriented Design methods.
- **Ivar Jacobson** – Contributed to UML and use case–driven software engineering.

1.10 Software Testing and Quality Assurance

- **Glenford Myers** – Author of "The Art of Software Testing."
- **Cem Kaner** – Leading figure in practical software testing and test case design.
- **Mauro Pezzè** – Research on software testing, validation, and self-healing systems.
- **Michal Young** – Work on software testing and analysis tools.

1.11 Empirical and Data-Driven Software Engineering

- **Victor Basili** – Introduced the Goal-Question-Metric (GQM) paradigm and empirical software engineering.
- **Forrest Shull** – Research on evidence-based software engineering practices.
- **Diomidis Spinellis** – Research on software analytics and large-scale software measurement.

- **Thomas Zimmermann** – Work on mining software repositories and empirical defect prediction.

1.12 Requirements Engineering

- **Axel van Lamsweerde** – Known for goal-oriented requirements engineering.
- **Bashar Nuseibeh** – Research on requirements analysis and software evolution.
- **Alessandra Russo** – Contributions to formal methods in requirements and specification.

1.13 Software Maintenance, Evolution, and Analytics

- **Audris Mockus** – Work on mining software repositories and software evolution.
- **Prem Devanbu** – Research in empirical software engineering and naturalness of code.
- **Michael W. Godfrey** – Contributions to software evolution and architecture recovery.

1.14 Modern Software Engineering and AI in SE

- **Tim Menzies** – Research on AI-driven software analytics and defect prediction.
- **Thomas Zimmermann** – Applied machine learning to software quality prediction.
- **Andrian Marcus** – Research on software visualization and program comprehension.

2 Prominent Conferences and Journals

2.1 Top-Tier AI / ML Conferences

- **NeurIPS** — Conference on Neural Information Processing Systems *Focus:* Core ML, deep learning, theory + practice.
- **ICML** — International Conference on Machine Learning *Focus:* Foundational ML research.
- **ICLR** — International Conference on Learning Representations *Focus:* Deep learning, representation learning.
- **AAAI** — Association for the Advancement of Artificial Intelligence *Focus:* Broad AI topics.
- **IJCAI** — International Joint Conference on Artificial Intelligence *Focus:* Classical + modern AI.

2.2 Applied AI / Data Science Conferences

- **IEEE ICDM** — International Conference on Data Mining *Focus:* Applied data mining, pattern discovery.
- **ACM KDD** — Knowledge Discovery and Data Mining *Focus:* Data science, applied ML.
- **Springer / IEEE BigData, AIoT, SmartData** *Focus:* Applied AI in software, IoT, big data systems.
- **ACM / IEEE CIKM** — Conference on Information and Knowledge Management *Focus:* AI for information systems, data integration.

2.3 Software Engineering + AI Conferences

- **IEEE / ACM ICSE** — International Conference on Software Engineering *Focus:* Top software engineering conference.
- **IEEE MSR** — Mining Software Repositories *Focus:* Using ML on codebases, bug reports, Git data.
- **IEEE ASE** — Automated Software Engineering *Focus:* ML-driven software automation.
- **ACM ESEC/FSE** — Empirical Software Engineering and Automation *Focus:* Empirical SE, automation, ML in development.
- **Springer EMSE** — Empirical Software Engineering (Journal) *Focus:* Journal for mature research in empirical SE.

2.4 Trustworthy / Responsible AI Conferences

- **ACM FAccT** — Fairness, Accountability, and Transparency *Focus:* Ethics and governance in AI.
- **IEEE AIES** — AI, Ethics, and Society *Focus:* Responsible AI, AI safety.
- **Springer AI & Society (Journal)** *Focus:* Interdisciplinary responsible AI research.

2.5 Recommended Journals

- **IEEE Transactions on Neural Networks and Learning Systems (TNNLS)** *Focus:* Core ML & neural networks.
- **IEEE Transactions on Software Engineering (TSE)** *Focus:* AI in SE, automation, quality, analysis.

- **ACM Transactions on Intelligent Systems and Technology (TIST)** *Focus:* Applied AI, intelligent systems.
- **Journal of Machine Learning Research (JMLR)** *Focus:* Foundational ML.
- **Springer Data Mining and Knowledge Discovery** *Focus:* Applied ML, data science.
- **Elsevier Information Sciences** *Focus:* Hybrid AI + system-based data analysis.
- **Wiley Software: Practice and Experience** *Focus:* Software systems, empirical AI-driven solutions.

2.6 Practical Resources

1. ArXiv
2. Papers with code
3. ACM Digital Library
4. IEEE Xplore
5. SpringerOpen
6. DSpaceMIT
7. Semantic Scholar
8. Google Scholar

These databases let you:

- Search for conferences and journals in your field.
- Check paper formats and acceptance rates.
- Identify trending research topics.