Curriculum Vitae – Romain Pinquié

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I am an Associate Professor in Computer-Mediated Collaborative Engineering Systems Design at the School of Industrial Engineering of Grenoble Institute of Technology and a research fellow at the G-SCOP UMR CNRS Laboratory of Design, Optimisation and Production. As a contribution to practice, I invent collaborative, highly interactive and visually rich 3D systems modelling user interfaces by parsimoniously mixing three interaction paradigms: Computer-as-tool (HCI) to extend engineers capabilities, Computer-as-partner (AI) to delegate tasks to artificial agents, and Computer-as-medium (CSCW) to communicate with teammates.

Keywords: *Digital Engineering; Systems Architecting; Model-Based Systems Architecting; Human-Computer Interaction; Human-Systems Integration; Human-Centered Computing; Engineering Systems Design; Computer-Mediated Collaboration; New Product Development; Computer Supported Cooperative Work; Systems Engineering; Model-Based Systems Engineering; Human-Centered Design; 3D User Interface; Virtual Reality; Machine Learning; Natural Language Processing; Text Mining; Conversational AI; Knowledge Engineering.*

EDUCATION

2016 – Arts & Métiers ParisTech, LSIS UMR CNRS 7296, France – Ph.D in Product Design
2012 – Cranfield University, School of Engineering, UK - M.Sc.in Computational Techniques in Engineering
2012 – ESTIA Institute of Technology, France – 2012, M.Eng in Computer-Aided Engineering
2009 – Preparatory classes for the national entrance examination to French engineering schools
2006 – Toulouse 3 University, France – B.Sc. in Mechanical Engineering for Aerospace Technology

POSITIONS HELD

2018 (Fall) - present – Assistant professor, Grenoble Institute of Technology, France
2018 (Winter) - 2018 (Fall) – Assistant professor, Arts & Métiers ParisTech – LSIS UMR CNRS, France
2016 - 2017 (Fall) – Post-doctoral research fellow, Airbus Helicopters, France
2013 (Fall) - 2016 (Fall) – Doctoral research fellow, Arts & Métiers ParisTech – LSIS UMR CNRS, France
2013 (Winter) - 2013 (Fall) – Research engineer, Supméca – LISMMA, France

RESEARCH

STUDENTS

Ph.D. students (155 % of supervision of defended PhD thesis):

- **Ghislain Mugisha** (2024-2027)
  - **Supervisors**: **Pinquié (INPG) 50 %** - Loup-Escande (UPJV) 50 %
  - Thesis: Understanding the influence of visual metaphors on cognitive and transdisciplinary collaborative conceptual co-design activities

- Doctoral school: : I-MEP², Université Grenoble Alpes
- Funding: PEPR eNSEMBLE

- **Sergio Camilo Medina Galvis** (2024-2027)
  - **Supervisors**: **Pinquié (INPG) 70 %** - Noël (INPG) 30 %
  - Thesis: Exploring the potential of the Industrial Metaverse in Systems Architecting: hope beyond the hype?
  - Doctoral school: : I-MEP², Université Grenoble Alpes
  - Funding: ANR LabCom MIMESIS
- **Emilie Perreau** (2023-2026)
  - **Supervisors**: **Pinquié (INPG) 50 %** - Masclet (INPG) 50 %
  - Thesis: Ergonomics guidelines for specifying, designing, and evaluating interactions between a generative conversational AI and a systems engineer
  - Doctoral school: : I-MEP², Université Grenoble Alpes
  - Funding: French Aeronautics and Space Research Foundation
- **Valentin Jousseaume** (2022-2025)
  - **Supervisors**: **Pinquié (INPG) 30 %** - Segonds (ENSAM) 70 %
  - Thesis: Digital adoption of engineering software: application to product lifecycle management
  - Doctoral school: SMI 442, Arts et Métiers ParisTech
  - Funding: French National Research Agency CIFRE project – partnership with KNOWMORE
- **Insaf Nahri** (2021-2024)
  - **Supervisors**: **Pinquié (INPG) 30 %** - Véron (ENSAM) 70 %
  - Thesis: Artificial intelligence for extracting textual requirements from unstructured building specification documents and integration of formal requirements in a Building Information Modelling digital mock-up
  - Doctoral school: SMI 442, Arts et Métiers ParisTech
  - Funding: French National Research Agency CIFRE project – partnership with CSTB
- **Chao Zhang** (2021-2024)
  - **Supervisors**: **Pinquié (INPG) 30 %** - Paulette (ENSAM) 30% - Pernot (ENSAM) 40%
  - Thesis: Deep learning for computer-aided reverse engineering of 3D parametric CAD models from 2D technical drawings
  - Doctoral school: SMI 442, Arts et Métiers ParisTech
  - Funding: China Scholarship Council
- **Abdelhadi Lammini** (2021-2024)
  - **Supervisors** : **Pinquié (INPG) 40 %** - Foucault (INPG) 40% - Noël (INPG) 20%
  - Thesis: Mixed Reality for maintaining the geometrical coherence of a Digital Twin
  - Doctoral school : I-MEP², Université Grenoble Alpes
  - Funding: French National Research Agency project – ANR PRC COHERENCE 4D.
- **Haobo Wong** (2021-2024)
  - **Supervisors: Pinquié (INPG) 75 %** - Noël (INPG) 25 %
  - Thesis: Exploring the potential of virtual reality for model-based systems architecting
  - Doctoral school : I-MEP², Université Grenoble Alpes
  - Funding: French National Research Agency project – ANR JCJC ArchiTOOL
- **Victor Romero** (2019-2022)
  - Supervisors: **Pinquié (INPG) 50 %** - Noël (INPG) 50 %
  - Thesis: An immersive multi-view virtual environment for model-based design reviews
  - Doctoral school: I-MEP², Grenoble Alpes University
  - Funding: Scholarship from the I-MEP² doctoral school of Grenoble Alpes University

- Award: Best PhD Thesis 2022-2023 Association Française d'Ingénierie Système

- **Armand Huet** (2018-2022)
  - Supervisors: **Pinquié (INPG) 30 %** - Véron (ENSAM) 30 % - Segonds (ENSAM) 40 %
  - Thesis: A context-aware cognitive design assistant
  - Doctoral school: SMI 442, Arts et Métiers ParisTech
  - Funding: Industrial contract, Capgemini
- **Simon Debord** (2017-2018 *resignation*)
  - Supervisors: **Pinquié (INPG) 30 %** - Véron (ENSAM) 30 % - Segonds (ENSAM) 40 %
  - Thesis: Research on a design rules framework
  - Doctoral school: Sciences des Métiers de l'Ingénieur 442, Arts et Métiers ParisTech.
  - Funding: Industrial contract, Capgemini

Post-Doctoral research fellows:

- **Haobo Wang** (2024-2027)
  - Supervisors: **Pinquié (INPG) 100 %**
  - Research topic: A virtual world for the human-centric co-design of a complex system architecture and its industrial system.
  - Funding: ANR LabCom MIMESIS
- **Yaroslav Menshenin** (2022-2025)
  - Supervisors: **Pinquié (INPG) 100 %**
  - Research topic: Model-Based Systems Engineering for the development of new drug-device combination products.
  - Funding: Industrial contract, Becton Dickinson
- **Amer Ezoji** (2019-2022)
  - Supervisors: **Pinquié (INPG) 50 %** - Boujut (INPG) 50 %
  - Research topic: Knowledge capture and reuse for the design of Open Source Hardware products and related services
  - Funding: H2020 Open!Next

M.Sc. Research students:

- **Manon Magendie (2023)**
  - Supervisors : **Pinquié (INPG) 50 %** - Segonds (ENSAM) 50 %
  - Thesis title: AI-based text and free-hand sketch analysis for assessing the additive manufacturability of product concepts during ideation workshops
- **Arthur Glotin (2022)**
  - Supervisors : **Pinquié (INPG) 50 %** - Segonds (ENSAM) 50 %
  - Thesis title: Free-hand sketch analysis for assessing the additive manufacturability of product concepts during ideation workshops
- **Oscar Fossey (2021)**
  - Supervisors: **Pinquié (INPG) 50 %** - Segonds (ENSAM) 50 %
  - Thesis title: Natural language processing for assessing the additive manufacturability of product concepts during ideation workshops
- **Hoa Tran Thi Than (2021)**
  - Supervisors : **Pinquié (INPG) 50%** - Foucault (INPG) 50%
  - Thesis title: 3D geometric modelling in virtual reality
- **Victor Romero (2019):**
  - Supervisors: **Pinquié (INPG) 50%** - Noël (INPG) 50%

- Thesis title: A user-centric computer-aided verification process in a virtuality-reality continuum

PROJECTS

- **ANR PEPR eNSEMBLE (2024-2027)**
  - **Description**: The purpose of the PEPR eNSEMBLE (Future of Digital Collaboration) is to fundamentally redefine digital tools for collaboration. To achieve this goal, we need to invent mixed (i.e. physical and digital) collaboration spaces that do not simply replicate the physical world in virtual environments, enabling co-located and/or geographically distributed teams to work together smoothly and efficiently. As part of the PEPR eNSEMBLE, I obtained a PhD scholarship to understand the influence of visual metaphors on cognitive and transdisciplinary collaborative conceptual co-design activities. The aim of the thesis is threefold. First, the fundamental objective is to understand how interactive visual representations influence the cognitive and collaborative activities of stakeholders involved in co-design activities. Second, a methodological aim is to propose a protocol for evaluating visual metaphors and metrics for measuring cognitive and collaborative activities in a transdisciplinary computer-mediated co-design activity. Third, the final goal is to develop ergonomic recommendations that provide concrete, actionable guidance for designing and evaluating virtual metaphors and ease the adoption of interactive visualisation in collaborative conceptual design phases.
  - **Scientific coordinator**: Romain Pinquié, Grenoble Institute of Technology (Grenoble INP).
  - **Funding**: XXX 000 € by the French National Research Agency (ANR).
  - **Role**:
    - Ph.D co-supervisor

- **ANR LabCom Joint Research Lab MIMESIS et Institut Carnot LSI (2024-2029)**
  - **Description**: The iMmersive huMan-systEms InteractionS lab (MIMESIS'Lab) is a joint research laboratory between the G-SCOP UMR CNRS Laboratory of Design, Optimisation and Production at the Grenoble Institute of Technology (Grenoble INP-UGA) and the software editor SKYREAL. Our research tries to understand how humans represent and interact with different types of design information, and to develop natural and visually rich 3D human-computer interactions with the goal of advancing human-centred systems engineering. Short-term objectives include the development of new multi-modal collaborative modelling interfaces to explore and manage digital threads and to co-design architectures of engineered systems.
  - **Scientific coordinator**: Romain Pinquié, Grenoble Institute of Technology (Grenoble INP).
  - **Funding**:
    - 363 000 € by the French National Research Agency (ANR).
    - 56 000 € by Institut Carnot LSI.
  - **Role**:
    - Project scientific coordinator
    - Member of the executive committee
    - Member of the steering committee
    - Member of the scientific committee
    - Ph.D co-supervisor

- **AI-Driven Engineering Assistance System (AIDEAS) (2023-2026)**
    - **Description**: The objectives of the AIDEAS joint research project between the technological research institute Saint-Exupery and Grenoble Institute of Technology are twofold. First, it aims to fine-tune Large Language Models for tailoring a generative conversational AI to systems engineering activities. Second, the objective is to define methodological ergonomics guidelines for specifying, designing, implementing and evaluating interactions between a systems engineer and a conversational generative AI.
    - **Coordinator**: Romain Pinquié, Grenoble Institute of Technology (Grenoble INP).
    - **Funding**: 546 749 € by the French Aeronautics and Space Research Foundation.
    - **Role**:
        - Project scientific coordinator
        - Ph.D co-supervisor

- **Industrial contract Becton Dickinson (2022-2025)**
    - **Description**: This action research project will integrate various methodological engineering design elements into a model-based systems engineering framework (process, method, modelling method, modelling language, modelling software) to support the Advanced Drug Delivery Systems division of Becton Dickinson Medical Pharmaceutical Systems in the development of future new MedTech drug-device combination products.
    - **Scientific coordinator**: Romain Pinquié, Grenoble Institute of Technology (Grenoble INP).
    - **Funding**: 285 000€ by Becton Dickinson – Medical Pharmaceutical Systems.
    - **Role**:
        - Local coordinator
        - Coordinator of the professional training course on systems engineering
        - Member of the executive committee
        - Member of the steering committee
        - Postdoctoral research fellow supervisor

- **ANR EQUIPEX+ Continuum (2021-2031)**
    - **Description**: The CONTINUUM research project will create a collaborative research infrastructure of 30 platforms located throughout France, to advance interdisciplinary research based on interactions between computer science and the human and social sciences. Thanks to CONTINUUM, 37 research teams will develop cutting-edge research programs focusing on visualization, immersion, interaction and collaboration, as well as on human perception, cognition and behaviour in virtual/augmented reality. (**Website**)
    - **Scientific coordinator**: Michel Beaudouin-Lafon, French National Research Council (CNRS).
    - **Funding**: 13.6M€ by Investments of the Future national program.
    - **Role**:
        - Member of the scientific committee
        - Member of the technology transfer committee
        - Member of the working group promoting education and professional training for XR

- **ANR PRC 2020 “Coherence4D” ANR-20-CE10-0002 (2021-2024)**
    - **Description**: The COHERENCE 4D research project will develop a new paradigm of modelling, visualisation, interaction, and coherence maintenance of the digital twin interfaced with the physical twin. Thus, the maintenance of coherence will be done in four dimensions to take into account the spatio-temporal character of the evolutions: the digital twin modelled in

three dimensions (3D) adapts to the temporal evolutions (4th dimension) of the physical twin. (Website)
- **Scientific coordinator**: Jean-Philippe Pernot, Arts et Métiers ParisTech.
- **Funding**: 623 188€ by the French National Research Agency (ANR).
- **Role**:
    - Scientific coordinator of the work package 5 "integration and validation"
    - Ph.D co-supervisor

- **ANR JCJC 2020 "ArchiTool" ANR-20-CE10-0010 (2021-2024)**
    - **Description**: The ArchiTOOL research project aims at inventing, prototyping, and evaluating an immersive and intelligent virtual environment for collaboratively designing the architecture of engineered systems. Instead of using domain-specific engineering software, the immersive and interactive environment will provide the architect with the modelling capabilities required to define the various views (operational, specification, functional, behavioural, structural, logic, safety, etc.) of a system architecture in a single virtual space before exporting each viewpoint in a standardised format that will enable domain-experts to continue with a detailed design. Moreover, the immersive environment will include a cognitive agent to support the system architect with intelligent capabilities: model verification, context-aware recommendation of rules, identification and automation of modelling routines. (Website)
    - **Scientific coordinator**: Romain Pinquié, Grenoble Institute of Technology (Grenoble INP).
    - **Funding**: 172 502€ by the French National Research Agency (ANR).
    - **Role**:
        - Project scientific coordinator
        - Ph.D. co-supervisor

- **Horizon 2020 "Open!Next" (2019-2022)**
    - **Description**: The OPEN!NEXT innovation project aims at enablong SMEs to engage in company-community collaboration for means of co-development and market exploitation of Open Source Hardware (OSH) products and related services. OPEN!NEXT builds upon the vision that SMEs are the best placed to release the formidable potential of OSH in terms of product innovation and business incubation. The project aims to establish a company-community ecosystem, facilitate the engagement of SMEs in efficient collaboration with OSH communities and open up new avenues for value creation. (Website)
    - **Scientific coordinator**: Robert Mies, Technische Universitat Berlin.
    - **Funding**: 5,8M€ by the European Union's Horizon 2020 research and innovation programme.
    - **Role**:
        - Member of the steering committee
        - Postdoctoral research fellow co-supervisor

PUBLICATIONS

Theses

[1] R. Pinquié. (2016) **A requirement mining framework.** Ph.D. Thesis. Arts & Métiers ParisTech. LSIS UMR CNRS 7296 Laboratory. Aix-en-Provence, France.

[2] R. Pinquié. (2012) **Prognostics and health management design technology: research on the application of functional modelling to structural integrity problems.** M.Sc. Thesis. Cranfield University. School of Engineering. Applied Mathematics & Computing Group. Cranfield, United Kingdom.

Refereed Journal Articles (11 publications)

[11]] I. Nahri, R. Pinquié, P. Véron, N. Bus, M. Thorel (2024) **Extracting Structured Requirements from Unstructured Building Technical Specifications for Building Information Modeling.** In *Journal of Building Engineering*, Vol. 114, No. 103806, 2023.
DOI: https://doi.org/10.1016/j.cag.2023.05.021

[10] C. Zhang, A. Polette, **R. Pinquié**, G. Carasi, H. De Charnace, J-P. Pernot. (2025) **eCAD-Net: editable parametric CAD models reconstruction from dumb B-Rep models using deep neural networks.** In *Computer-Aided Design*, Vol. 118, 2025, pp. 179-189, 2025.
DOI: https://doi.org/10.1016/j.cad.2024.103806

[9] C. Zhang, **R. Pinquié**, A. Polette, G. Carasi, H. De Charnace, J-P. Pernot. (2023) **Automatic 3D CAD models reconstruction from 2D orthographic drawings.** In *Computers & Graphics*, Special Issue on Shape Modeling International (SMI) 2023, Vol. 114, 2023, pp. 179-189, 2023.
DOI: https://doi.org/10.1016/j.cag.2023.05.021

[8] **R. Pinquié**, O. Fossey, F. Segonds. (2022) **DREAM: a design assistant for assessing additive manufacturability**. In *International Journal of Product Lifecycle Management (IJPLM)*, Vol. 14, No. 5, pp. 328-349, 2022.
DOI: https://doi.org/10.14733/cadaps.2022.1184-1190

[7] V. Romero, **R. Pinquié**, F. Noël. (2022) **A user-centric computer-aided verification process in a virtuality-reality continuum**. In *Computers in Industry*, Vol. 140, 2022.
DOI: https://doi.org/10.1016/j.compind.2022.103678

[6] T.T.H Tranh, G. Foucault, **R. Pinquié**. (2022) **Benchmarking of 3D modelling in virtual reality**. In *Computer-Aided Design and Applications (CADA)*, Vol. 19, No. 6, pp. 1184-1190, 2022.
DOI: https://doi.org/10.14733/cadaps.2022.1184-1190

[5] A. Huet, **R. Pinquié**, P. Véron, F. Segonds, V. Fau. (2022) **Design rules application in manufacturing industries: a state-of-the-art survey and proposal of a context-aware approach**. In *International Journal on Interactive Design and Manufacturing (IJIDeM)*, Vol. 16, pp. 317-322, 2022.
DOI: https://doi.org/10.1007/s12008-021-00821-w

[4] A. Huet, F. Segonds, **R. Pinquié**, P. Véron, J. Guegan, A. Mallet. (2021) **Context-aware cognitive design assistant: Implementation and study of design rules recommendations**. In *Advanced Engineering Informatics*, Vol. 50, 2021.
DOI: https://doi.org/10.1016/j.compind.2020.103377

[3] A. Huet, **R. Pinquié**, P. Véron, A. Mallet, F. Segonds, N. Croué. (2020) **CACDA: A knowledge graph for a context-aware cognitive design assistant**. In *Computers in Industry*, Vol. 125, 2020.
DOI: https://doi.org/10.1016/j.compind.2020.103377

[2] **R. Pinquié**, P. Véron, F. Segonds, N. Croué. (2016) **Requirement mining for model-based product design**. In *International Journal of Product Lifecycle Management,* Vol. 9, No. 4, pp. 305-332, 2016.
DOI: 10.1504/IJPLM.2016.080983

[1] **R. Pinquié**, L. Rivest, F. Segonds, P. Véron. **An illustrated glossary of ambiguous terms used in discrete manufacturing**. In *International Journal of Product Lifecycle Management*, Vol. 8, No. 2, pp. 142-171, 2015.
DOI: https://doi.org/10.1504/IJPLM.2015.070580

Refereed International Conference Papers (28 publications)

[28] E. Perreau, **R. Pinquié**, C. Masclet (2024) **A Pilot Study for Analyzing Systems Engineer-Conversational GenAI Interaction: A Case Study for Requirements Development & Validation**. 3rd International Conference on Human Systems Integration, Jeju, Korea, August 27-29, 2024. *DOI: https://doi.org/10.1007/978-3-031-25182-5_18*

[27] Y. Menshenin, **R. Pinquié** (2024) **The Influence of Human-Systems Integration on the "Fuzzy Front End" of Innovation: A MedTech Case Study**. 3rd International Conference on Human Systems Integration, Jeju, Korea, August 27-29, 2024. In: Noël, F., Nyffenegger, F., Rivest, L., Bouras, A. (eds) Product Lifecycle Management. PLM in Transition Times: The Place of Humans and Transformative Technologies. PLM 2024. IFIP Advances in Information and Communication Technology, vol 667. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-031-25182-5_18

[26] I. Nahri, **R. Pinquié**, P. Véron, N. Bus, M. Thorel (2024) **Named Entity Recognition for Building Information Model Verification using Large Language Models**. IFIP 21th International Conference on Product Lifecycle Management (PLM), Bangkok, Thailand, July 7-10, 2024. In: Noël, F., Nyffenegger, F., Rivest, L., Bouras, A. (eds) Product Lifecycle Management. PLM in Transition Times: The Place of Humans and Transformative Technologies. PLM 2024. IFIP Advances in Information and Communication Technology, vol 667. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-031-25182-5_18

[25] S. C. Medina Galvis, **R. Pinquié**, B. Paterne (2024) **Exploring Model-Based Systems Architecting Digital Threads in Virtual Reality**. IFIP 21st International Conference on Product Lifecycle Management (PLM), Bangkok, Thailand, July 7-10, 2024. In: Noël, F., Nyffenegger, F., Rivest, L., Bouras, A. (eds) Product Lifecycle Management. PLM in Transition Times: The Place of Humans and Transformative Technologies. PLM 2024. IFIP Advances in Information and Communication Technology, vol 667. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-031-25182-5_18

[24] **R. Pinquié,** H. Wang, F. Noël (2024) **Direct Solid Modelling in Virtual Reality for Systems Architecting**. 34th CIRP Design Conference, Cranfield, United Kingdom, June 3-5, 2024. In *Procedia CIRP*. Vol. 119, pp. 146-151, 2023.
DOI: https://doi.org/10.1016/j.procir.2023.02.131

[23] **R. Pinquié**, L. Roucoules, P-A. Yvars, R. Chenouard (2024) **Operationalizing community-based open scientific design research benchmarks: application to model-based architecture design synthesis**. 18th International Design Conference, Dubrovnik-Cavtat, Croatia, May 20-24, 2024.
DOI: https://doi.org/10.1017/pds.2024.12

[22] Y. Menshenin, **R. Pinquié,** C. Chevrier (2023) **Defining a new role of system architect at the product strategy stage of a MedTech product development through the DSM-based method**. 25th International DSM Conference (DSM 2023), Gothenburg, Sweden, October 03-05, 2023. In *Proceedings of the Design Society*, pp. 116-122, 2023.
DOI: https://doi.org/10.35199/dsm2023.13

[21] Y. Menshenin, **R. Pinquié,** P. Chevrier (2023) **Holistic Perspective to the Drug-Device Combination Product Development Challenges**. IFIP 20th International Conference on Product Lifecycle Management (PLM), Montreal, QC, Canada, July 9-12, 2023. In: Danjou, C., Harik, R.,

Nyffenegger, F., Rivest, L., Bouras, A. (eds) Product Lifecycle Management. Leveraging Digital Twins, Circular Economy, and Knowledge Management for Sustainable Innovation. PLM 2023. IFIP Advances in Information and Communication Technology, vol 701. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-031-62578-7

[20] Y. Menshenin, **R. Pinquié,** P. Chevrier (2023) **New product development process for MedTech combination products**. 24th International Conference on Engineering Design (ICED), Bordeaux, France, July 24-28, 2023. In *Proceedings of the Design Society*, 3, pp. 2795-2804, 2023.
DOI: https://doi.org/10.1017/pds.2023.280

[19] **R. Pinquié,** H. Wang, F. Noël (2023) **Human-centric co-design of model-based system architecture**. 33rd CIRP Design Conference, Sydney, Australia, May 17-19, 2023. In *Procedia CIRP*. Vol. 119, pp. 146-151, 2023.
DOI: https://doi.org/10.1016/j.procir.2023.02.131

[18] A. Huet, **R. Pinquié,** F. Segonds, P. Véron (2023) **A cognitive design assistant for context-aware computer-aided design**. 33rd CIRP Design Conference, Sydney, Australia, May 17-19, 2023. In *Procedia CIRP*. Vol. 119, pp. 1029-1034, 2023.
DOI: https://doi.org/10.1016/j.procir.2023.03.146

[17] V. Romero, **R. Pinquié**, F. Noël. (2022) **An open benchmark exercise for model-based design reviews**. IFIP 19th International Conference on Product Lifecycle Management (PLM), Grenoble, France, July 10-13, 2022. In: Noël, F., Nyffenegger, F., Rivest, L., Bouras, A. (eds) Product Lifecycle Management. PLM in Transition Times: The Place of Humans and Transformative Technologies. PLM 2022. IFIP Advances in Information and Communication Technology, vol 667. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-031-25182-5_18

[16] A. Lammini, **R. Pinquié**, G. Foucault, F. Noël. (2022) **Geometric coherence of a digital twin: a discussion**. IFIP 19th International Conference on Product Lifecycle Management (PLM), Grenoble, France, July 10-13, 2022. In: Noël, F., Nyffenegger, F., Rivest, L., Bouras, A. (eds) Product Lifecycle Management. PLM in Transition Times: The Place of Humans and Transformative Technologies. PLM 2022. IFIP Advances in Information and Communication Technology, vol 667. Springer, Cham. https://doi.org/10.1007/978-3-031-25182-5_23

[15] **R. Pinquié**, V. Romero, F. Noël. (2022) **Survey of model-based design review: practices and challenges**. 17th International Design Conference, Dubrovnik-Cavtat, Croatia, May 23-26, 2022.
DOI: https://doi.org/10.1007/978-3-031-25182-5_23

[14] **R. Pinquié,** J. Le Duigou, L. Grimal, L. Roucoules. (2022) **On open science platform for benchmarking engineering design researches**. 32rd CIRP Design Conference, Gif-sur-Yvette, France, March 28-30, 2022. In *Procedia CIRP*. Vol. 109, pp. 472-477, 2022.
DOI: https://doi.org/10.1016/j.procir.2022.05.280

[13] R. Antoniou, **R. Pinquié**, J-F Boujut, A. Ezoji. (2021) **Identifying the factors affecting the replicability of open-source hardware designs**. 23rd International Conference on Engineering Design (ICED), Gothenburg, Sweden, August 16-20, 2021.
DOI: https://doi.org/10.1017/pds.2021.443

[12] V. Romero, **R. Pinquié**, F. Noël. (2021) **An immersive virtual environment for reviewing model-centric designs**. 23rd International Conference on Engineering Design (ICED), Gothenburg, Sweden, August 16-20, 2021.
DOI: https://doi.org/10.1017/pds.2021.45

[11] A. Ezoji, J.-F. Boujut, **R. Pinquié**. **Requirements for design reuse in open-source hardware: a state of the art.** 31st CIRP Design Conference, Enschede, Netherlands, May 18-21, 2021. In *Procedia CIRP*. Vol. 100, pp. 792-797, 2021.
DOI: https://doi.org/10.1016/j.procir.2021.05.042

[10] T.T.H. Tranh, G. Foucault, **R. Pinquié**. (2021) **Benchmarking of 3D modelling in virtual reality environments**. 21st annual International CAD Conference, Barcelona, Spain, July 5-7, 2021 (selected for the international journal Computer-Aided Design and Applications).
DOI: https://doi.org/10.14733/cadconfP.2021.324-328

[9] V. Romero, **R. Pinquié**, F. Noël. (2021) **A computer-aided verification process for engineered systems.** Conférence Internationale Génie Industriel (CIGI) QUALITA, Grenoble, France, May 5-7, 2021 (selected for the international journal Computers in Industry).

[8] A. Huet, **R. Pinquié**, F. Segonds, V. Fau. (2020) **Knowledge graph of design rules for a context-aware cognitive design assistant**. In: Nyffenegger F., Ríos J., Rivest L., Bouras A. (eds) Product Lifecycle Management Enabling Smart X. PLM 2020. IFIP Advances in Information and Communication Technology, vol 594. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-030-62807-9_27

[7] A. Ezoji, **R. Pinquié,** J-F. Boujut. (2020) **Towards a better understanding of open source hardware design reuse in company-community collaboration**. In: Roucoules L., Paredes M., Eynard B., Morer Camo P., Rizzi C. (eds) Advances on Mechanics, Design Engineering and Manufacturing III. JCM 2020. Lecture Notes in Mechanical Engineering. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-030-70566-4_24

[6] A. Huet, **R. Pinquié**, P. Véron, F. Segonds, V. Fau. (2020) **Design rules application in manufacturing industries: a state-of-the-art survey and proposal of a context-aware approach**. In: Roucoules L., Paredes M., Eynard B., Morer Camo P., Rizzi C. (eds) Advances on Mechanics, Design Engineering and Manufacturing III. JCM 2020. Lecture Notes in Mechanical Engineering. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-030-70566-4_53

[5] **R. Pinquié**, P. Véron, F. Segonds, T. Zynda. (2019) **A property graph data model for a context-aware design assistant**. In: Fortin C., Rivest L., Bernard A., Bouras A. (eds) Product Lifecycle Management in the Digital Twin Era. PLM 2019. IFIP Advances in Information and Communication Technology, vol 565. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-030-42250-9_17

[4] **R. Pinquié**, P. Véron, F. Segonds, N. Croué. (2018) **A requirement mining framework to support sub-systems suppliers**. 28th CIRP Design Conference, Nantes, France, May 23-25, 2018. In *Procedia CIRP*. Vol. 70, pp. 410-415, 2018 (Nominated for the best paper award).
DOI: https://doi.org/10.1016/j.procir.2018.03.228

[3] **R. Pinquié**, P. Micouin, P. Véron, F. Segonds. (2016) **Property model methodology: a case study with Modelica**. 11th International Tools and Methods of Competitive Engineering (TMCE) symposium, Aix-en-Provence, France, May 9-13, 2016.

[2] **R. Pinquié**, P. Véron, F. Segonds, N. Croué. (2016) **Natural Language Processing of Requirements for Model-Based Product Design with ENOVIA/CATIA V6**. In: Bouras, A., Eynard, B., Foufou, S., Thoben, KD. (eds) Product Lifecycle Management in the Era of Internet of Things. PLM 2015. IFIP Advances in Information and Communication Technology, vol 467. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-319-33111-9_19

[1] **R. Pinquié**, P Véron, F Segonds, N. Croué. (2018) **A collaborative requirement mining framework to support OEMs.** In: Luo, Y. (eds) Cooperative Design, Visualization, and Engineering. CDVE 2015. Lecture Notes in Computer Science(), vol 9320. Springer, Cham.
DOI: https://doi.org/10.1007/978-3-319-24132-6_13

Refereed National Conference Papers (3 publications)

[3] E. Perreau, **R. Pinquié**, C. Masclet. (2024) **Proposition d'une méthodologie de recherche pour l'étude des interactions humains-agent conversationnel textuel en milieu écologique : application pour des tâches d'Ingénierie Système**. In ModACT, Paris, France, May 22-24, 2024. (Best presentation award)

[2] A. Glotin, **R. Pinquié**, A. Ouradi, C. Ouazine, F. Segonds. (2022) **Dream: design rules extractor for additive manufacturability, processing of natural language and free-hand sketches**. In CONFERE, Bâle, Switzerland, July 7-8, 2022.

[1] S. Debord, F. Segonds, **R. Pinquié**, P. Véron, N. Croué. (2018) **Proposition of design rules framework**. CONFERE, Budapest, Hungary, July 5-7, 2018.

MEMBERSHIP OF COMMITTEES, COMMISSIONS, BOARDS, OR SIMILAR

- Scientific committee member of Systems.Manufacturing.Academics.Resources.Technologies (S.mart) national special interest group since 2023.
- Elected board member of the G-SCOP UMR 5272 laboratory since 2023.
- Elected scientific committee member of the International Federation for Information Processing WG 5.1 (Website) since 2017.
- INCOSE French Chapter, board member of the Rhône Alpes local committee

SCIENTIFIC DUTIES

Review of papers for journals

- International Journal of Design Science
- International Journal of Computer-Aided Design and Applications
- International Journal of Computers in Industry
- International Journal of Concurrent Engineering: Research and Applications

Scientific / International Program Committee of international conferences

2025:
- 10th Int. Conference on Research Into Design, January 8-10 2025, Hyderabad, India.
- 25th Int. Conference on Engineering Design, August 11-14 2025, Dallas, Texas, USA.

2024:
- 15th Int. Complex Systems Design & Management Conference, December 12-13 2024, Paris, France.
- 3rd Int. INCOSE Human-Systems Integration Conference 2024, August 28-30 2024, Jeju, Korea.
- 18th Int. Design Conference 2022, May 20-23 2024, Dubrovnik, Croatia.
- 20th Int. Conference on Product Lifecycle Management 2022, July 8-10 2024, Bangkok, Thailand.

2023:
- 20th Int. Conference on Product Lifecycle Management 2023, July 9-12 2023, Montréal, Canada.
- 24th Int. Conference on Engineering Design (ICED22), August 2023, Bordeaux, France.

2022:

- 19th Int. Conference on Product Lifecycle Management 2022, July 10-13 2022, Grenoble, France.
- 17th Int. Design Conference 2022, May 23-26 2022, Dubrovnik, Croatia.

2021:

- 23rd Int. Conference on Engineering Design (ICED21), August 2021, Gothenburg, Sweden.
- 18th Int. Conference on Product Lifecycle Management, July 11-14 2021, Parana, Brazil.

2020:

- 17th Int. Conference on Product Lifecycle Management, July 5-8 2020, Rapperswil, Switzerland.

2019:

- 22nd Int. Conference on Engineering Design (ICED19), August 5-8 2019, Delft, The Netherlands.
- 16th Int. Conference on Product Lifecycle Management, July 8-12 2019, Moscow, Russia.
- 16th annual Int. CAD Conference, June 24-26 2019, Singapore.

2018:

- 87th INCOSE Great Lake Regional Conference, October 17-20 2018, Indianapolis, USA.
- 15th annual Int. CAD Conference, July 9-11 2018, Paris, France.
- 28th annual INCOSE Int. Symposium, July 7-12 2018, Washington, USA.

Review of submissions to calls of the French National Research Agency (ANR)

- Specific call “Recherche-Action SIOMRI” of the French National Research Agency (ANR) 2021.
- Generic call 2022 of the French National Research Agency (ANR) 2021.
- Industrial call “Industrial Chairs” of the French National Research Agency (ANR) 2020.

Participating in or organising workshops

- Workshop IEEE, INCOSE-AFIS Systems Engineering, 2025, Paris, France.
- Digital Twin Contest, Int. Conf. on Product Lifecycle Management, 2024, Bangkok, Thailand.
- Workshop co-chair, *“Design Research Quality”*, Design Society, 18th International Design Conference, Dubrovnik-Cavtat, Croatia, May 20-24, 2024.
- Workshop speaker, “*Co-design of a community-based ecosystem to improve validation practices in engineering research”*, S.mart Special Interest Group in Industry 4.0, Carry le Rouet, France, April 2023.
- Workshop coordinator and speaker, “*Advanced visualisation and interaction for Model-Based Systems Engineering*”, INCOSE French Chapter, Grenoble, France, March 2023.
- Workshop speaker, “*Research benchmarks in systems engineering: Application to the activities of early validation and verification*”, French-Academia forum of the INCOSE French Chapter, Toulouse, France, December 2022.
- Scientific coordinator, Int. Conference on Product Lifecycle Management, Grenoble, France, July 2022.
- Organiser of the monthly scientific seminars and the annual scientific writing workshop for the integrated design research department (3 research teams) of G-SCOP laboratory since 2018.

Chair at international conferences

- Technical Program Committee Chair, INCOSE-IEEE International Workshop, 2025, Paris, France.
- Chair, Digital Twin Contest, Int. Conf. on Product Lifecycle Management, 2024, Bangkok, Thailand.
- Chair, Design Research Quality workshop, International Design Conference, 2024, Dubrovnik, Croatia
- Chair, VR-Enhanced Design session, Int. Conf. on Engineering Design (ICED), 2023, Bordeaux, France
- Chair, Frameworks for project and service development session, Int. Conf. on Product Lifecycle Management, 2023, Montreal, Canada
- Chair, opening keynote, Int. Conf. on Product Lifecycle Management, 2022, Grenoble, France.

Local or external committee for associate and full professor selection

- External committee member, associate professor selection, Arts et Métiers ParisTech, France, 2024.
- Local committee member, associate professor selection, Grenoble INP, Grenoble, 2024.
- External committee member, associate professor selection, Arts et Métiers ParisTech, France, 2023.
- External committee member, associate professor selection, Arts et Métiers ParisTech, France, 2019.
- External committee member, associate professor selection, Arts et Métiers ParisTech, France, 2018.

Special interest groups (SIGs)

- Co-chair, Design Society, Design Research Quality SIG.
- Co-chair, INCOSE French Chapter, Local Chapter Auvergne-Rhône Alpes SIG.
- Contributor, Design Society, Design Process SIG.
- Contributor, Design Society, Healthcare Systems Design Research SIG.
- Contributor, INCOSE French Chapter, Model-Based Systems Engineering SIG.
- Founder, Benchmarks for the validation of engineering design research SIG. (Website)

EDUCATION

Courses Taught

2024-2025 (approx. 285 h)

- ***Course director:***
- Innovation (31h, 110 post-graduate students)
- Systems Engineering (86h, 120 post-graduate students)
- ***Course instructor:***
- CAD and Product Data Management (47h, 70 post-graduate students)
- Research Design in Industrial Engineering, (30h, 25 post-graduate students)
- Computer-Aided Design (16h, 120 post-graduate students)
- Virtual and augmented reality (27h, 20 post-graduate students)
- Model-Based Systems Engineering (40h, 30 post-graduate students)

2023-2024 (approx. 285 h)

- ***Course director:***
- Innovation (31h, 110 post-graduate students)
- Systems Engineering (86h, 120 post-graduate students)
- ***Course instructor:***
- CAD and Product Data Management (47h, 70 post-graduate students)
- Research Design in Industrial Engineering, (21h, 35 post-graduate students)
- Computer-Aided Design (16h, 120 post-graduate students)
- Virtual and augmented reality (27h, 20 post-graduate students)
- Model-Based Systems Engineering (45h, 30 post-graduate students)

2022-2023 (316 h)

- ***Course director:***
- Innovation (30,5h, 110 post-graduate students)

- Text mining (15h, 20 post-graduate students)
- Systems Engineering (82,5, 120 post-graduate students)

▪ ***Course instructor:***

- CAD and Product Data Management (47h, 60 post-graduate students)
- Research Design in Industrial Engineering, (21h, 35 post-graduate students)
- Computer-Aided Design (32h, 120 post-graduate students)
- Virtual and augmented reality (30h, 30 post-graduate students)
- Model-Based Systems Engineering (21h, 20 post-graduate students)

2021-2022 (419 h)

▪ ***Course director:***

- Innovation (30,5h, 110 post-graduate students)
- Text mining (15h, 30 post-graduate students)
- Systems Engineering (38h, 120 post-graduate students)

▪ ***Course instructor:***

- CAD and Product Data Management (46h, 60 post-graduate students)
- Research Design in Industrial Engineering, (15h, 35 post-graduate students)
- Computer-Aided Design (15h, 30 post-graduate students)
- Virtual and augmented reality (27h, 30 post-graduate students)
- Knowledge engineering (7h, 30 post-graduate students)
- Model-Based Systems Engineering (9h, 35 post-graduate students)
- Systems Engineering Prototyping (22h, 120 post-graduate students)

▪ ***Continuing professional development :***

- Systems Engineering course for Becton Dickinson Medical Pharmaceutical Systems (74,5 h)

2020-2021 (346 h)

▪ ***Course creator :***

- Text mining (15h, 30 post-graduate students)

▪ ***Course director:***

- Innovation (30,5h, 110 post-graduate students)
- Systems Engineering (29h, 120 post-graduate students)

▪ ***Course instructor:***

- CAD and Product Data Management (48h, 60 post-graduate students)
- Industrial engineering (32h, 60 post-graduate students)
- Virtual and augmented reality (30h, 20 post-graduate students)
- Systems Engineering Prototyping (30h, 120 post-graduate students)
- Computer-Aided Design (15h TD, post-graduate students)
- Model-Based Systems Engineering (10h, 30 post-graduate students)
- Apprenticeship in the industry (15h, 20 post-graduate students)

▪ ***Continuing professional development:***

- Systems Engineering course for Becton Dickinson Medical Pharmaceutical Systems (50h)

2019-2020 (192 h)

▪ ***Course co-creator :***

- Virtual and augmented reality (25h, 25 post-graduate students)

▪ ***Course director:***

- Innovation (30,5h, 110 post-graduate students)
- Systems Engineering (26h, 120 post-graduate students)

- ***Course instructor:***

- CAD and Product Data Management (50h, 60 post-graduate students)
- Research Design in Industrial Engineering, (15h, 35 post-graduate students)
- Computer-Aided Design (12h, 30 post-graduate students)
- Modelling and Optimization in Product Development (19h, 25 post-graduate students)

2018-2019 (220 h)

- ***Course instructor:***

- Digital chain for industry 4.0 including extended reality, 20h for co-creation of a new course
- Systems engineering (52h, 35 post-graduate students)
- CAD and Product Data Management (47h, 60 post-graduate students)
- Modelling and Optimization in Product Development (21h, 25 post-graduate students)
- New assistant professor training program (64h)

Before 2018

- ***Course instructor:***

- 2017-2018. Computer-Aided Design and Product Data Management at *Arts & Métiers ParisTech* Engineering School, post-graduate students, 58 hours.
- 2017-2018. Kinematics and dynamics of multibody systems at *Arts & Métiers ParisTech* Engineering School, post-graduate students, 20 hours.
- 2015-2016. Computer-Aided Design and Product Data Management at *Arts & Métiers ParisTech* Engineering School, post-graduate students, 35 hours.
- 2015-2016. Equation-based physical systems modelling and simulation at *Ecole Polytechnique Féminine* Engineering School, post-graduate students, 24 hours.
- 2014-2015. Equation-based physical systems modelling and simulation at *Ecole Polytechnique Féminine* Engineering School, post-graduate students, 16 hours.