Stéphane Magnenat, PhD

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Born on 14th February 1980
Swiss citizenship, married

H-index (Google Scholar, raw): 30
H-index (Scopus, raw): 22

Languages: French (native), English (proficiency, C2), German (intermediate, B2)

Education

2007–2010 **PhD**, mobile robotics, Laboratory of Robotics Systems, **EPFL**, Lausanne, Switzerland. *Software integration in mobile robotics, a science to scale up machine intelligence*

1998–2003 **Master** in computer science, Processor Architecture Laboratory, **EPFL**, Lausanne, Switzerland. *XScale embedded development*

1995–1998 **Swiss federal scientific maturity**, Gymnase August Piccard, Lausanne, Switzerland.

Entrepreneurial experience

10.2017– **Enlightware GmbH**, Switzerland **Founder and CEO**
Enlightware is a social enterprise whose aim is to re-empower humans in the current world through the use of technologies such as computer vision, artificial intelligence, and augmented reality.
Our first product, Candli, is a SaaS web app enabling children to learn STEAM concepts by making their own video games from their drawings. Candli is a transfer from my research work at Game Technology Center, ETH Zurich.
Team of 4.

09.2010– **Association Mobsya**, Switzerland **Founder and board member**
02.2018 **Founder** and board member until 2016. Producer of the Thymio educational robot.

Academic positions

09.2016– **Game Technology Center, ETH Zurich**, Switzerland head: **Bob Sumner**
08.2022 **Deputy Research Director**

- Research on cyber-physical systems; including human-computer/robot interfaces, augmented reality, serious gaming, and computer-science education using robots.
- **Team leader** of an augmented-reality museum app for the LGT bank and the Princely collections of Liechtenstein.
- **Team leader** of Game Creator, an augmented-reality app allowing children to make video games from their own drawings.
- **Team leader** of NPC engine, a MCTS algorithm for emergent narrative in games.
- **Team leader** of VRAT, a Virtual Reality avatar therapy for people hearing voices, in collaboration with Psychiatric University Hospital, Zurich.

08.2015–08.2016 **Lab. of Robotics Systems, EPFL**, Switzerland head: **Francesco Mondada**
Senior researcher and team leader
- **Team leader** Swiss CTI project 17479.2 *Context-Aware Augmented Reality in Robotics for Education* (7 team members), while laboratory head was away in sabbatical.
- Research on computer-science education, augmented reality, interaction design, computer vision, serious gaming, robot localization, low-cost robotics.

06.2014–07.2015 **Disney Research Zürich**, Switzerland head: **Markus Gross**
Associate Research Scientist
- **Work-package leader** (10 partners) of the *FI-CONTENT2* (26 partners) EU **Future Internet Public Private Partnership**.
- Research on computer-science education, computer graphics, computer vision, interaction design, video games. Conception of a country-wide augmented reality game in collaboration with a large-scale newspaper (20 Minuten).

02.2014–05.2014 **FHNW**, Brugg, Switzerland **Lecturer**
Lecturer of educational robotics for pre-service teachers.

09.2010–07.2014 **Autonomous Systems Lab, ETH Zurich**, Switzerland head: **Roland Siegwart**
Senior researcher and team leader educational robotics
- Research on educational robotics, autonomous mapping, learning by demonstration, construction by autonomous mobile robots.
- Contributions to visual programming, computer-science education, 3-D mapping, sensor calibration, task execution, planning, learning and system integration to the *myCopter*, *NIFTi*, *vCharge*, *ASCENS*, *noptilus* EU **FP7 collaborative projects**.

08.2010–08.2010 **Electronics Laboratory, ETH Zurich**, Switzerland head: **Gerhard Tröster**
Senior researcher
Application of autonomous mental development to sensor networks.

10.2006–07.2010 **Lab. of Robotics Systems, EPFL**, Switzerland head: **Francesco Mondada**
PhD student and teaching assistant
- Research on structure construction by autonomous mobile robots.
- Research on adapting state-of-the-art capabilities (SLAM, HTN planning, symbol grounding, object manipulation) to the constraints of miniature mobile robots.
- Research on low-level event-based architecture for the control of mobile robots.
- Worked in the *Swarmanoid* EU **FP6 Specific Targeted Research Project**.

11.2005–09.2006 **Lab. of Digital Systems, HEPIA**, Switzerland head: **René Beuchat**
Research and teaching assistant
- Development of signal-processing software for an orthesis for myopathic patients.
- Development of the electronics and the control software for a miniature turbojet.

05.2003–10.2005 **Lab. of Intelligent Systems, EPFL**, Switzerland head: **Dario Floreano**
Research and teaching assistant
- Research on collective robotics and on the emergence of communication in artificial agents, modelling of the evolutionary dynamics of social insects.
- Worked in *Swarmbot* and *ECAgents* EU **FP6 projects**.

2002–2003 **Processor Architecture Lab., EPFL**, Switzerland head: **Paolo Ienne**
Master student in a joint project with Julien Pilet
- Design of open-hardware ARM processor and multimedia boards for mobile robots.
- Port of the Linux kernel.

2001–2002 **Lab. of Peripheral Systems, EPFL**, Switzeland head: **Roger Hersch**
Bachelor student in a joint project with Luc-Olivier de Charrière
Virtual ecosystem running on a parallel supercomputer, OpenGL 3D client.

International research experience

1.2015 **Learning + Tech. Group, Aalto University**, Finland — head: **Lauri Malmi**
Research on computer science education using mobile robots and augmented reality.

7.2013 **CEEO, Tufts University**, Medford, USA — head: **Chris Rogers**
Research on educational robotics.

9.2012–12.2012 **Willow Garage**, Menlo Park, CA, USA — CTO: **Brian Gerkey**
Research on large-scale 3-D localisation and mapping, learning by demonstration.

Industrial experience

8.2000–7.2001 **VulcanArts Development S.A.**, Geneva, Switzerland — **Software engineer**
Software architecture for interactive television, **team leader** (5 people).

1998–2006 **The Globulation Project** — **Project leader, game designer, software engineer**
Co-initiator of this open-source multiplayer real-time strategy game. Team of seven people over Internet, game available in all major Linux distributions.

1999–2005 **DIDEL S.A.**, Lausanne, Switzerland — **Software engineer**
Various software for embedded development on PIC microcontroller.

1999–2001 **The SnakeMe Project** — **Software engineer, team leader**
Open-source snake game, $>$ 200 k downloads.

Award and prizes

2022.11.02 Pädagogischen Medienpreis 2022 winner, category "Angebote für die pädagogische Praxis", for Candli.

2019.03.19 ETH Spark Award 2019 finalist, in top 5 inventors of year 2018 at ETH Zurich, for my work on our Game Creator app for children.

2017.07.18 University of Cambridge Public Engagement with Research Awards along with Dr. Elisa Laurenti for our work on teaching stem cell science with the Thymio robot.

2016.05.12 2016 Edison Gold Award "Student learning" for our work on Augmented Creativity

2016.05.11 2016 Prix Entreprendre Région Lausanne "Education" for our work on Thymio

2015.10.02 Best Full Paper Honorable Mention for our paper *Live Texturing of Augmented Reality Characters from Colored Drawings* at *ISMAR 2015*

2013.05.08 Nominee for the *2013 IEEE/IFR Invention and Entrepreneurship in Robotics and Automation (IERA) Award*

2012.08.30 Best Demonstration Award at *ECAI 2012*

2011.02.04 Second place for the *Most Useful* entry at the *ROS 3D Contest* from Willow Garage

Grants and fellowships

2019.06 Innosuisse innovation cheque 38826.1 INNO-ICT *Interactive learning environment for game creator*: **CHF 15 000**

2018.01 Grant from LGT bank for developing an augmented-reality museum app for the Princely collections of Liechtenstein: **CHF 125 000**

2016.08 Grant from the Mobsya association for the ETH GTC for research and development related to the Thymio robot. Funded research contribution: **CHF 130 000**

2015.02 Swiss CTI project: 17479.2 *Context-Aware Augmented Reality in Robotics for Education*. Co-author. Funded research contribution: **CHF 353 000**

2015.01 Travel grant for visiting Aalto University, Finland. 2 k Euros

1999.10.4–8 Travel and venue grant for participation to the European Student Outreach Program and 50 IAF congress in Amsterdam, Netherland.

Technical Skills

applied mathematics: artificial intelligence, automated planning, machine learning, Bayesian methods, evolutionary computation, neural networks, numerical optimisation, computer graphics

robotics technologies: system integration, 2-D and 3-D mapping, augmented reality, computer vision, sensor calibration, symbol grounding, digital electronics, embedded systems, microcontrollers, middleware, ROS, virtual machines, compilers

programming languages: **Rust** (4 years experience), **c++/c** (25 years experience), **Python** (15 years experience)
basic knowledge: QML, C#, Java, Scala, R, PHP, Ada, Pascal, assembly, Lisp, BASIC, SQL

Technological transfers to products

2018– Candli developed by **Enlightware**, a follow-up of the Game creator research app.

2015–2016 Augmented reality coloring book; used by **Disney**.

2012– libnabo **nearest-neighbor** library; used by **Google** and by **Sevensense Robotics**.

2012– libpointmatcher **3-D mapping** library; used by **NASA** for planetary reconstruction.

2010– Thymio **educational robot**; uses my Aseba software framework and my visual programming language, **80 k units sold**.

2008– Enki **2-D robot simulator**; used in the Webots commercial simulator.

Open-source software

2021 nabo-rs, a pure Rust implementation of the fast K Nearest Neighbor (KNN) library for low-dimensional spaces.
Rust. 1 k SLOC, 100 % by me.

2007–2018 Aseba, an event-based architecture for distributed control of mobile robots.
C++/C/Python. 50 k SLOC, 63 % by me. Initiator and project leader, 6 contributors.
Used by the Thymio project and *Swarmanoid*, *Perplexus*, *ASCENS* European projects.

2012–2018 Thymio VPL mobile. Visual programming language for the Thymio robot on tablet.
QML/C++. 5 k SLOC, 70 % by me. Initiator and project leader, 1 contributor.

1999–2018 Enki, a fast 2D mobile robot simulator.
C++. 15 k SLOC, 80 % by me. Initiator and project leader, 5 contributors.
Used by Aseba, the Webots simulator, and several research projects.

2011–2015 libpointmatcher, a modular and fast ICP library for 3-D mapping.
C++. 15 k SLOC, 16 % by me. Projet co-initiator, 10 contributors.
Used by several researcher project and NASA for planetary reconstruction.

2011–2015 libnabo, a fast nearest-neighbour–search library.
C++. 5 k SLOC, 95 % by me. Projet initiator, 10 contributors.
Used by Google for Project Tango.

2009–2012 Planner9, a HTN planner distributed on miniature mobile robots.
C++. 7 k SLOC, 70 % by me. Initiator and project leader, 1 contributor.

2005–2006 Osqoop, a software Oscilloscope with support for orthesis control.
C++. 10 k SLOC, 80 % by me. Initiator and project leader, 6 contributors.

2004–2005 Teem, an artificial evolution framework.
C++. 25 k SLOC, 60 % by me. Co-initiator and project leader, 3 contributors.

1998–2006 Globulation, an open-source multiplayer real-time strategy game.
C++. 94 k SLOC, 20 % by me. Co-initiator and project leader, 6 contributors.
Game available in all major Linux distributions.

SLOC *measurements as reported by* `cloc/sloccount`*, contribution percentage as the ratio of my commited* SLOC *vs all.*

Supervision of graduate students, researchers, engineers and designers

Only people supervised in the academic context are mentioned.

Researchers ETH-GTC: Henry Raymond, Julia Chatain; EPFL: Dr Amaury Dame, Dr Pablo Márquez Neila, Mohammad Ehsanul Karim; DRZ: Dat Ngo Tien, Fabio Zünd; ETH-ASL: Dr Jiwon Shin

Engineers & designers ETH-GTC: Forouzan Farzinnejad; EPFL: Martin Voelkle, Maria Beltran, Ramiz Morena; DRZ: Mattia Ryffel; ETH-ASL: Benoit Lescot; EPFL: Kevin Frugier, Matthieu Bontemps

Master students **Master theses:** ETH-GTC: Lucas Habersaat, Aydin Faraji, Dirk Hüttig, Mischa Brander, Sven Knobloch, Virginia Ramp, Lasse Lingens, Niclas Scheuing, Marie Woon; EPFL: Rémy Siegfried, Coline Lugaz; ETH-ASL: Titus Cieslewski, Janine Stocker, Stefan Wismer, Ganesh Ramanathan; EPFL: Christophe Gusthiot, Martin Voelkle
Semester projects: ETH-ASL: Shiling Wang, Jürg Weber, Marcel Flügel; EPFL: Nicolas Dinh, Guillaume Monnard, Max Laager

Bachelor students ETH-GTC: Heinrich Grattenthaler, Patrick Eppensteiner, Nora Tommila, David Enderlin, Olivier Bitter, Michael Flückiger, Olivier Bitter; ETH-ASL: Luc Weydert, Markus Stäuble, Matthias Konrad Bloch, Thomas Gubler, Stefan Stalder, Jonathan Huber, Roman Müller, Timo Müller, Wolf Vollprecht, Lorenz Wellhausen, Lorenz Kuechler, Mischa Kolbe, Timon Homberger, Dominik Rüttimann; EPFL: Yves Stauffer

Teaching activities

2018– **Initiator and coordinator**, game programming workshops, several events per year, ETH Zurich and Enlightware. 150 students.

2008–2018 **Initiator and coordinator**, robot programming workshops for children; team of ten assistants, several events per year, EPFL and ETH Zurich. 50 students.

2014 **Lecturer**, educational robotics seminar for pre-service teachers, FHNW. 15 students.

2010 **Main teacher**, C++ program. course, bachelor in microengineering, EPFL. 60 stud.

2008–2010 **Main teacher**, robot localisation laboratory work, master microeng., EPFL, 20 stud.

2006–2009 **Teaching assistant**, embedded systems and c++ programming courses, bachelor in microengineering, EPFL, 60 students.

2005–2006 **Teaching assistant**, embedded systems, microengineering and computer science students, HEPIA, 30 students.

2003–2005 **Teaching assistant**, bio-inspired computing machines, master course, EPFL, 40 stud.

2001–2003 **Student assistant**, comp. hardware, peripherals, real-time systems, EPFL, 50 stud.

Other contributions to the community

Reviewer **Journal:** Robotics and Automation Magazine, Autonomous Robots, Swarm Intelligence, Journal of Software Engineering for Robotics, EURASIP Journal on Embedded Systems, Journal of Advanced Robotic Systems, Algorithms, Systems Science and Control Engineering, IEEE Transactions on Learning Technologies, IEEE Robotics and Automation Letters
Conference: IEEE International Conference on Robotics and Automation, IEEE/RSJ International Conference on Intelligent Robots and Systems, Distributed Autonomous Robotic Systems, Conference on Design and Architectures for Signal and Image Processing, Human-Robot Interaction, IEEE Conference on Virtual Reality and 3D User Interfaces, Interaction Design and Children

PC member Towards Autonomous Robotic Systems 2011, ROS Developer Conference 2013

Event Co-organizer of the EPFL robotics festival, 2008–2010 (15 k attendees in 2010)

Presentations, talks and demonstrations

I have given 60 talks and workshops worldwide, not listing internal meetings of research projects. 25 were invited.

Journal papers

[1] S. **Magnenat** and F. Colas. A Bayesian Tracker for Synthesizing Mobile Robot Behaviour from Demonstration. *Autonomous Robots*, 2021.

[2] M. Brander, S. Egger, N. Hürlimann, E. Seifritz, R. W. Sumner, S. Vetter, and S. **Magnenat**. Virtual Reality Human-Human Interface to deliver psychotherapy to people experiencing auditory verbal hallucinations, a development and usability study. *JMIR Serious Games*, 2021.

[3] F. Mondada, M. Bonani, F. Riedo, M. Briod, L. Pereyre, P. Rétornaz, and S. **Magnenat**. Bringing Robotics to Formal Education: The Thymio Open-Source Hardware Robot. *IEEE Robotics & Automation Magazine*, volume 24, pages 77–85, 2017.

[4] S. **Magnenat**, D. T. Ngo, F. Zünd, M. Ryffel, G. Noris, G. Rothlin, A. Marra, M. Nitti, P. Fua, M. Gross, and R. W. Sumner. Live Texturing of Augmented Reality Characters from Colored Drawing. *IEEE Transactions on Visualization and Computer Graphics*, volume 21, pages 1201–1210, 2015.

[5] F. Pomerleau, F. Colas, R. Siegwart, and S. **Magnenat**. Comparing ICP Variants on Real-World Data Sets. *Autonomous Robots*, volume 34, pages 133–148, 2013.

[6] F. Ducatelle, G. A. D. Caro, A. Förster, M. Bonani, M. Dorigo, S. **Magnenat**, F. Mondada, R. O'Grady, C. Pinciroli, P. Rétornaz, V. Trianni, and L. M. Gambardella. Cooperative Navigation in Robotic Swarms. *Swarm Intelligence*, volume 8, pages 1–33, 2013.

[7] S. **Magnenat**, R. Philippsen, and F. Mondada. Autonomous construction using scarce resources in unknown environments. *Autonomous Robots*, volume 33, pages 467–485, 2012.

[8] J. Elseberg, S. **Magnenat**, R. Siegwart, and A. Nüchter. Comparison of nearest-neighbor-search strategies and implementations for efficient shape registration. *Journal of Software Engineering for Robotics*, volume 3, pages 2–12, 2012.

[9] M. Dorigo, D. Floreano, L. M. Gambardella, F. Mondada, S. Nolfi, T. Baaboura, M. Birattari, M. Bonani, M. Brambilla, A. Brutschy, D. Burnier, A. Campo, A. L. Christensen, A. Decugnière, G. D. Caro, F. Ducatelle, E. Ferrante, A. Förster, J. M. Gonzales, J. Guzzi, V. Longchamp, **S. Magnenat**, N. Mathews, M. M. de Oca, R. O'Grady, C. Pinciroli, G. Pini, P. Rétornaz, J. Roberts, V. Sperati, T. Stirling, A. Stranieri, T. Stützle, V. Trianni, E. Tuci, A. E. Turgut, and F. Vaussard. Swarmanoid: a novel concept for the study of heterogeneous robotic swarms. *IEEE Robotics & Automation Magazine*, volume 20, pages 60–71, 2013.

[10] D. Roggen, S. **Magnenat**, M. Waibel, and G. Tröster. Designing and sharing activity recognition systems across platforms: methods from wearable computing. *IEEE Robotics and Automation Magazine*, volume 18, pages 83–95, 2011.

[11] S. **Magnenat**, P. Rétornaz, M. Bonani, V. Longchamp, and F. Mondada. ASEBA: A Modular Architecture for Event-Based Control of Complex Robots. *IEEE/ASME Transactions on Mechatronics*, volume 16, pages 321–329, 2011.

[12] D. Floreano, S. Mitri, S. **Magnenat**, and L. Keller. Evolutionary Conditions for the Emergence of Communication in Robots. *Current Biology*, volume 17, pages 514–519, 2007.

[13] M. Waibel, D. Floreano, S. **Magnenat**, and L. Keller. Division of labour and colony efficiency in social insects: effects of interactions between genetic architecture, colony kin structure and rate of perturbations. *Proc. of the Royal Society B*, volume 273, pages 1815–1823, 2006.

Conference papers

[14] S. **Magnenat**, H. Raymond, D. Enderlin, S. Knobloch, and R. W. Sumner. NPC engine: a High-Performance, Modular, and Domain-Agnostic MCTS Framework for Emergent Narrative. In *Intelligent Narrative Technologies (INT) workshop*. 2022.

[15] J. Chatain, V. Ramp, V. Gashaj, V. Fayolle, M. Kapur, R. W. Sumner, and S. **Magnenat**. Grasping Derivatives: Teaching Mathematics through Embodied Interactions using Tablets and Virtual Reality. In *Proc. of the 2022 ACM Interaction Design and Children Conference (IDC '22)*, pages 98–108. 2022.

[16] H. Raymond, S. Knobloch, F. Zünd, R. W. Sumner, and S. **Magnenat**. Leveraging efficient planning and lightweight agent definition: a novel path towards emergent narrative. In *12th Intelligent Narrative Technolgies Workshop (INT10 2020)(virtual)*. 2020.

[17] L. Lingens, R. W. Sumner, and S. **Magnenat**. Towards Automatic Drawing Animation Using Physics-Based Evolution. In *Proc. of the 2020 ACM Interaction Design and Children Conference: Extended Abstracts (IDC '20)*, IDC '20, pages 314–319. ACM, 2020.

[18] J. Chatain, O. Bitter, V. Fayolle, R. W. Sumner, and S. **Magnenat**. A Creative Game Design and Programming App. In *Motion, Interaction and Games (MIG '19)*. ACM, 2019.

[19] W. Johal, O. Robu, A. Dame, S. **Magnenat**, and F. Mondada. Augmented Robotics for Learners: A Case Study on Optics. In *28th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*, pages 1–6. IEEE, 2019.

[20] S. Ropelato, F. Zünd, S. **Magnenat**, M. Menozzi, and R. Sumner. Adaptive Tutoring on a Virtual Reality Driving Simulator. In *1st Workshop on Artificial Intelligence Meets Virtual and Augmented Worlds (AIVRAR) in conjunction with SIGGRAPH Asia 2017*. 2017.

[21] R. Siegfried, S. Klinger, M. Gross, R. W. Sumner, F. Mondada, and S. **Magnenat**. Improved mobile robot programming performance through real-time program assessment. In *Proc. of the 2017 ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE)*. ACM, 2017.

[22] S. Wang, F. Colas, M. Liu, F. Mondada, and S. **Magnenat**. Localization of inexpensive robots with low-bandwidth sensors. In *Distributed Autonomous Robotic Systems (DARS)*. IEEE, 2016.

[23] F. Zünd, M. Ryffel, S. **Magnenat**, A. Marra, M. Nitti, M. Kapadia, G. Noris, K. Mitchell, M. Gross, and R. W. Sumner. Augmented creativity: bridging the real and virtual worlds to enhance creative play. In *SIGGRAPH ASIA 2015 Mobile Graphics and Interactive Applications*, pages 21–27. ACM, 2015.

[24] D. Roy, P.-Y. Oudeyer, S. **Magnenat**, F. Riedo, G. Gerber, M. Chevalier, and F. Mondada. IniRobot: a pedagogical kit to initiate children to concepts of robotics and computer science. In *Proc. of the 6th International Conference on Robotics in Education*. 2015.

[25] S. **Magnenat**, M. Ben-Ari, S. Klinger, and R. W. Sumner. Enhancing Robot Programming With Visual Feedback and Augmented Reality. In *Proc. of the 2015 ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, pages 153–158. ACM, 2015.

[26] T. Cieslewski, S. Lynen, M. Dymczyk, S. **Magnenat**, and R. Siegwart. Map API - Scalable Decentralized Map Building for Robots. In *Proc. of the 2015 IEEE International Conference on Robotics and Automation (ICRA)*, pages 6241–6247. IEEE, 2015.

[27] J. Shin, R. Siegwart, and S. **Magnenat**. Visual Programming Language for Thymio II Robot. In *Proc. of the 2014 Conference on Interaction Design and Children (IDC)*. 2014.

[28] S. **Magnenat**, J. Shin, F. Riedo, R. Siegwart, and M. Ben-Ari. Teaching a Core CS Concept through Robotics. In *Proc. of the 2014 ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, pages 315–320. ACM, 2014.

[29] F. Riedo, M. Chevalier, S. **Magnenat**, and F. Mondada. Thymio II, a Robot That Grows Wiser with Children. In *Proc. of the 2013 IEEE Workshop on Advanced Robotics and its Social Impacts (ARSO)*, pages 187–193. IEEE Press, 2013.

[30] P. Rétornaz, F. Riedo, S. **Magnenat**, F. Vaussard, M. Bonani, and F. Mondada. Seamless Multi-Robot Programming for the People: Aseba and the Wireless Thymio II Robot. In *Proc. of the 2013 IEEE International Conference on Information and Automation (ICIA)*, pages 337–343. IEEE Press, 2013.

[31] S. **Magnenat**, C. Pradalier, and F. Colas. Towards Non-Parametric Bayesian Learning of Robot Behaviors from Demonstration. In *Bayesian Nonparametric Models for Reliable Planning and Decision-Making Under Uncertainty, NIPS 2012*. 2012.

[32] S. Wismer, G. Hitz, M. Bonani, A. Gribovskiy, and S. **Magnenat**. Autonomous Construction of a Roofed Structure: Synthesizing Planning and Stigmergy on a Mobile Robot. In *Proc. of the 2012 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 5436–5437. IEEE Press, 2012.

[33] S. **Magnenat**, F. Riedo, M. Bonani, and F. Mondada. A Programming Workshop using the Robot "Thymio II": The Effect on the Understanding by Children. In *Proc. of the 2012 IEEE International Workshop on Advanced Robotics and its Social Impacts (ARSO)*, pages 24–29. 2012.

[34] S. **Magnenat**, J.-C. Chappelier, and F. Mondada. Integration of Online Learning into HTN Planning for Robotic Tasks. In *Proc. of the 2012 AAAI Spring Symposia, Designing Intelligent Robots: Reintegrating AI*. 2012.

[35] J. Sturm, S. **Magnenat**, N. Engelhard, F. Pomerleau, F. Colas, W. Burgard, D. Cremers, and R. Siegwart. Towards a benchmark for RGB-D SLAM evaluation. In *Proc. of the RGB-D Workshop on Advanced Reasoning with Depth Cameras at Robotics: Science and Systems Conference (RSS)*. 2011.

[36] J. Stocker, A. Veillat, S. **Magnenat**, F. Colas, and R. Siegwart. Towards Adaptive Robotic Green Plants. In *Towards Autonomous Robotic Systems*, volume 6856 of *Lecture Notes in Computer Science*, pages 422–423. Springer, 2011.

[37] F. Pomerleau, S. **Magnenat**, F. Colas, M. Liu, and R. Siegwart. Tracking a Depth Camera: Parameter Exploration for Fast ICP. In *Proc. of the 2011 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 3824–3829. IEEE Press, 2011.

[38] M. Bonani, P. Rétornaz, S. **Magnenat**, H. Bleuler, and F. Mondada. Physical interactions in swarm robotics, the hand-bot case study. In *Proc. of the 10th International Symposium on Distributed Autonomous Robotic Systems (DARS)*, volume 83 of *Springer Tracts in Advanced Robotics*, pages 585–595. Springer, 2010.

[39] M. Bonani, V. Longchamp, S. **Magnenat**, P. Rétornaz, D. Burnier, G. Roulet, H. Bleuler, and F. Mondada. The MarXbot, a Miniature Mobile Robot Opening new Perspectives for the Collective-robotic Research. In *Proc. of the 2010 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 4187–4193. IEEE Press, 2010.

[40] F. Rochat, P. Schoeneich, M. Bonani, S. **Magnenat**, and F. Mondada. Design of Magnetic Switchable Device and Applications in Climbing Robots. In *Climbing and Walking Robots: Proc. of the 13th International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines (CLAWAR)*, pages 375–382. World Scientific, 2010.

[41] S. **Magnenat**, V. Longchamp, M. Bonani, P. Rétornaz, P. Germano, H. Bleuler, and F. Mondada. Affordable SLAM through the Co-Design of Hardware and Methodology. In *Proc. of the 2010 IEEE International Conference on Robotics and Automation (ICRA)*, pages 5395–5401. IEEE Press, 2010.

[42] S. **Magnenat**, M. Voelkle, and F. Mondada. Planner9, a HTN planner distributed on groups of miniature mobile robots. In *Proc. of the Second International Conference on Intelligent Robotics and Applications (ICIRA)*, volume 5928 of *Lecture Notes in Computer Science*, pages 1013–1022. Springer, 2009.

[43] M. Bonani, S. **Magnenat**, P. Rétornaz, and F. Mondada. The Hand-bot, a Robot Design for Simultaneous Climbing and Manipulation. In *Proc. of the Second International Conference on Intelligent Robotics and Applications (ICIRA)*, volume 5928 of *Lecture Notes in Computer Science*, pages 11–22. Springer, 2009.

[44] S. **Magnenat** and F. Mondada. Aseba Meets D-Bus: From the Depths of a Low-Level Event-Based Architecture into the Middleware Realm. In *Proc. of the 2009 IEEE TC-Soft Workshop on Event-based Systems in Robotics (EBS-RO)*. 2009. Invited paper.

[45] R. Groß, S. **Magnenat**, and F. Mondada. Segregation in swarms of mobile robots based on the Brazil nut effect. In *Proc. of the 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 4349–4356. IEEE Press, 2009.

[46] R. Groß, S. **Magnenat**, L. Küchler, V. Massaras, M. Bonani, and F. Mondada. Towards an Autonomous Evolution of Non-Biological Physical Organisms. In *Proc. of the 10th European Conference on Artificial Life (ECAL)*, volume 5777 of *Lecture Notes in Computer Science*, pages 173–180. Springer, 2009.

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