Press release

Artificial intelligence: Bosch presents AI Young Researcher Award

Award-winner teaches algorithms to learn

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- Junior researcher Gergely Neu receives 50,000 euros in prize money
- Neu praised for his research in the domain of reinforcement learning
- Bosch CDO/CTO Dr. Michael Bolle: “Neu’s work is helping to make artificial intelligence more robust, more reliable, and more understandable.”

Stuttgart, Germany – Bosch has presented the Bosch AI Young Researcher Award, endowed with 50,000 euros, for the first time. Dr. Gergely Neu, scientist at Pompeu Fabra University in Barcelona, won the jury over with his basic research in reinforcement learning (RL), an area of artificial intelligence (AI). Dr. Michael Bolle, management board member, Chief Digital Officer and Chief Technology Officer at Bosch, congratulated the 34-year-old honoree on his excellent achievements as he presented him with the Bosch AI Young Researcher Award at Bosch AI CON 2019 in Renningen. “This award is a way for the Bosch Center for Artificial Intelligence to recognize the exceptional achievements of young researchers in artificial intelligence,” Bolle says. “Gergely Neu’s research plays a major role in making AI more robust, more reliable, and more understandable.” The five-person jury of researchers from academia and industry reviewed submissions from across Europe and honored Neu’s application as the most promising, not least due to his research on probability theory. Neu’s work focuses on known “multi-armed bandit problems” through which algorithms learn to find their way through countless situations that can be combined in myriad ways.

Award winner Dr. Neu aims to bring AI theory and practice closer together

Neu considers a two-way exchange between academic and industry AI research to be essential, as mutual benefitting is the only way for each area to expand its knowledge. “I am very honored to accept this award, and I’m especially pleased to see Bosch’s commitment to supporting academic research,” Neu says. “In recent years, many talented AI researchers have been leaving academia for lucrative jobs in industry, so prizes like the Bosch AI Young Researcher Award

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play an important part in increasing the prestige of traditional academic careers." Neu plans to invest the 50,000 euro prize money towards amplifying his group's current collaborations and creating new ones by inviting guest researchers to his laboratory and by enabling his own team to be visiting researchers at other laboratories and to attend conferences.

Reinforcement learning: when machines learn the way children do

For more than ten years, the Hungarian scientist has been conducting research in the field of reinforcement learning, or RL. RL is an area of machine learning in which algorithms learn, intuitively and through experimenting, how their surroundings are constructed and what rules apply – much the same way a child explores the world and discovers what works and what doesn't. Neu investigates at what point existing RL algorithms reach their limits and why, using his findings to develop robust algorithms that perform reliably. In AI applications such as highly automated vehicles, automated financial trading systems, or intelligent power grids, reliability and stable performance are essential. Together with his team, Neu develops algorithms under conditions that are as realistic as possible: he exposes them to new environments and unknown situations, asks them to make vast numbers of decisions, and then examines the factors that led to success or failure. Unlike most empirical research in RL, Neu has decided to try to understand RL's underlying logic and functions in order to pave the way for robust generalizing methods. Solving this would ultimately advance all fields of application. With his basic research, the passionate scientist is improving the performance and reliability of algorithms – which he believes are one of the main obstacles to a more frequent use of AI solutions.

About Dr. Gergely Neu

As an expert and speaker at the most prominent scientific AI conferences and workshops (e.g. ICML, DALI, ALT, NeurIPS, ICLR), Neu is not an unknown name in the community. Before joining the Artificial Intelligence Group at Pompeu Fabra University in Barcelona in 2015, the AI researcher was already doing excellent work in Lille as a postdoc on the SequeL Team at the world-renowned INRIA institute (French research institute for digital sciences). He earned his doctorate from the Budapest University of Technology and Economics in 2013. His most recent appointment was as a visiting researcher at Google Brain in Zurich, where he focused on industry-relevant science, and he is already looking forward to spending the second half of 2020 at the Simons Institute at the University of California, Berkeley.

About the Bosch AI Young Researcher Award

With the annual Bosch AI Young Researcher Award, Bosch supports scientists whose outstanding achievements help make artificial intelligence increasingly robust, reliable, and easier to interpret. The jury, made up of researchers from academia and industry, evaluate the submissions according to criteria such as relevance, scientific quality, and innovativeness.

Applications for the Bosch AI Young Researcher Award 2020 will open in the spring of next year.

More information about the Bosch AI Young Researcher Award 2019 is available at www.bosch-ai.com/young-researcher-award.

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The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of
Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments for the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by
Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

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