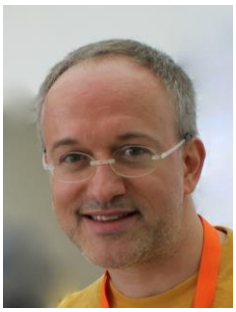
Constructionism 2018
Constructionism, computational thinking and educational innovation
Vilnius, Lithuania, August 21 to 25



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Rock bottom, the world, the sky: Catrobat, an extremely large-scale and long-term visual coding project relying purely on smartphones

Most of the 700 million teenagers everywhere in the world already have their own smartphones, but comparatively few of them have access to PCs, laptops, OLPCs, Chromebooks, or tablets. The free open source non-profit project Catrobat allows users to create and publish their own apps using only their smartphones. Initiated in 2010, with first public versions of our free apps since 2014 and 47 releases of the main coding app as of July 2018, Catrobat currently has more than 700,000 users from 180 countries, is available in 50+ languages, and has been developed so far by almost 1,000 volunteers from around the world ("the world"). Catrobat is strongly inspired by Scratch and indeed allows to import most Scratch projects, thus giving access to more than 37 million projects on our users' phones as of July 2018. Our apps are very intuitive ("rock bottom"), have many accessibility settings, e.g., for kids with visual or cognitive impairments, and there are tons of constructionist tutorials and courses in many languages. We also have created a plethora of extensions, e.g., for various educational robots, including Lego Mindstorms and flying Parrot quadcopters ("the sky"), as well as for controlling arbitrary external devices through Arduino or Raspberry Pi boards, going up to the stratosphere and even beyond to interplanetary space ("the sky"). A TurtleStitch extension allowing to code one's own embroidery patterns for clothes is currently being developed. Catrobat among others intensely focuses on including female teenagers. While a dedicated version for schools is being developed, our apps are meant to be primarily used outside of class rooms, anywhere and in particular outdoors ("rock bottom", "the world"). Catrobat is discovered by our users through various app stores such as Google Play and via social media channels such as YouTube as well as via our presence on Code.org. Sharing, remixing, and collaboration is actively encouraged and supported. Catrobat has a very long term perspective in that it is independent of continuous funding and actively developed in a test-driven way by hundreds of pro-bono volunteers from around the world. Our aim is to grow by a factor of thousand and reach a billion users by 2030. We warmly welcome new contributors in every imaginable field and way with open arms. Please join us and contact me via wolfgang@catrobat.org today!

About speaker

Wolfgang Slany heads the Institute of Software Technology at Graz University of Technology and is the head and founder of the Catrobat non-profit free open source project. Catrobat has received many international prizes and awards such as the Young Minds Award 2015 from the European Commission,

the Internet for Refugees Prize in 2016, the Re-Imagine Education Gold Award for the best European Educational App 2016 awarded by Wharton School in the US, as well as the Closing the Gender Gap 2017. Pocket Code is at the center of the European Commission's "No One Left Behind" Horizon2020 project that focuses on coding for girls, kids with special needs, and kids from underprivileged social backgrounds and regions. At Graz University of Technology, Wolfgang among others teaches an intensive large scale introductory course on coding in order to increase the number of female computer science students as well as giving students from all study fields the chance to learn coding in a fun and engaging way. Wolfgang is passionate about poverty alleviation through coding education for teens, in particular girls, refugees, and teens in developing countries, directly on their personal mobile phones. Professionally, Wolfgang is researching, consulting, and teaching on sustainable large scale agile software development and user experience topics for mobile platform projects.