



# Research Success Stories



August 2013

## Time and money for in-depth research

**Michael Bronstein from Università della Svizzera italiana has received one of the prestigious ERC starting grants. The grant allows him to continue the work he has done so far – but with more financial means, more time, and more freedom.**

Michael Bronstein received the starting grant of the European Research Council (ERC) about a year ago. “That grant is an extremely competitive, and prestigious funding scheme”, he says. Indeed, in 2012 there were 4741 applications, and only 566 of them were successful. This competitiveness was one reason for Michael Bronstein to apply.



**Prof. Dr. Michael Bronstein**  
 Università della Svizzera italiana

### Not doing miracles anymore

Michael Bronstein has also experience in industrial research and development (R&D) and working with startups. Bronstein explains the difference between that and the work he does now: “In a startup, you have little money and little time – with which you are expected to do miracles”, he says. Now that he is working for Università della Svizzera italiana and has received the

There was also another reason:

“While I also considered other funding opportunities, the starting grant has just a different scale: it really allows you to do research on fundamental things.” The long-term funding (up to 5 years) and the quite generous amount of money - up to 1.5 million euro in Bronstein’s case - allows him to work not only on applications but on theory as well.

**“The starting grant really allows you to do research on fundamental things.”**

grant, things are different. There is more time to devote to more fundamental research, rather than running after benchmarks and performance results.

### ABOUT THE PROJECT

The project COMET aims at improving methods for the detection of similarity between texts, images, videos or multimedia documents. Traditional approaches to the detection of similarity concentrate on distances between parts of an object. COMET, in contrast, aims to build a theoretical base that can accommodate broader notions of similarity that works across different modalities (sound, image, text, for example). Possible applications include multimedia search (like retrieving an image according to a tag query) or medical imaging (aligning pictures taken by CT and MRI so that they show similar parts of the body in a similar size and from a similar point of view).

Michael Bronstein divides his work into three parts: theoretical models, computational algorithms and applications. “We have developed efficient algorithms that work well in some important applications like multi-modal similarity-preserving hashing. But what is really missing is some broader unifying vision that explains the relations between different methods and why some of the work better than others”, Bronstein says.

### Disadvantages? None!

When asked whether he thinks there are any disadvantages of this kind of financing, Michael Bronstein gives a quick answer: “No, not that I am aware of.” For his university, the starting grant is a success as well: “it is an important appreciation that confirms its ability to attract excellent researchers from all over the world”, as the university writes in a media release.

### FACTS AND FIGURES

<b>Project Name:</b>	COMET – foundations of Computational similarity geoMETry
<b>Research Area:</b>	Industrial Manufacture
<b>Organisation:</b>	Università della Svizzera italiana (USI)
<b>Start Date - End Date:</b>	01.10.2012 – 30.09.2017
<b>Duration:</b>	5 years
<b>Project Cost:</b>	1.5 million Euros
<b>Project Funding:</b>	1.5 million Euros
<b>Project Reference:</b>	307047
<b>Contract Type:</b>	ERC Starting Grant

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Effingerstrasse 19  
CH - 3008 Bern  
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