

Description of Funded Research Projects

1st Call for H.F.R.I. Research Projects
to support Post-Doctoral Researchers



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Research Project Title:

**Democratizing Visual Analytics.
A Self-Service Platform for Big
Data Exploration**

Principal Investigator:
George Papastefanatos

Popular Title:

VisualFacts

Scientific Field:

Mathematics and Information Sciences

Host Institution:

**ATHENA Research and Innovation Center in Information
Communication & Knowledge Technologies**



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Self-service visual analytics is a new paradigm, widely promoted in modern corporate environments, in which business users are enabled and encouraged to directly manipulate (explore, blend, analyze) underlying data in rich visual ways. Allowing less tech-savvy end users to make decisions based on their own queries and analyses, freeing up the organization's information technology (IT) teams from the tedious work of data preparation.

A major challenge of the Big Data era is the management of vast amounts of diverse, open datasets for analysis, by non-corporate data analysts such as research scientists, data journalists, policy makers, small SMEs and individuals. The level of difficulty in transforming a data-curious user into someone who can competently access, analyze and consume that data, is even higher in the Big Data era, making it especially burdensome for users with little or no support or expertise on data management.

Democratizing self-service data analytics, thus enabling a greater number of data scientists with diverse needs to seamlessly and collaboratively perform data analysis in a most intuitive and productive way, without the support of expert IT users in the data preparation, analysis and optimization phase, is a major obstacle that has to be overcome in order to exploit the inherent added value of data.

The aim of VisualFacts is to develop a cloud-based scalable platform for providing self-service visual analytic capabilities to a wide range of non-corporate users to access, explore, analyze open and privately-held data and collaborate on the analytic results of their work by sharing, annotating and reusing them in the form of open facts. VisualFacts will take advantage of cutting-edge technologies in the fields of visual analytics and data management in order to provide fully automated processes for the production of smart visual analytics, allowing for intuitive exploration and visual recommendation scenarios.

The major impact of the VisualFacts project and the produced technologies, will be a new paradigm for the democratization of the visual analytics methods, that enables the consumption, visual analysis and intuitive gaining of insights from big data, by a broader community of stakeholders that are actively engaged in the Big Data economy including corporate users, SMEs, research scientists, policy makers and data journalists as well as the sharing of these insights in an open, collaborative and standardized way, i.e., in the form open visual facts.

VisualFacts primary goal of democratizing data analysis through visual facts, rather than plain data availability, will further contribute to the discoverability, accessibility, transparency and accountability of open data knowledge, encouraging evidence-based policymaking and administrative efficiency. It also improves citizen's participation and facilitates public contribution (generation of visual facts) in social sectors like health, environment, and corruption.

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Dr. George Papastefanatos is a research associate at the Information Management Systems Institute (IMSI) of the Athena Research Centre, since 2009. George has more than 60 publications in conferences and journals in data management; a major part of this work has been performed in the last 5 years. George's research activities lie at the core of the tasks of VisualFacts project, having developed a strong track record and expertise around big data management and analytics and specifically in issues related to indexing and query optimization, data integration, data visualization and visual analytics. H.F.R.I. funding is vital for George to further promote and achieve excellence in this research area by building a strong research team, consisting of 1 Postdoc and 2 PhD students, and developing a strong and multidisciplinary collaboration with other researchers in the Greek academia and abroad.

*The Principal Investigator,
George Papastefanatos*

Funding

Amount: **172,000 €**

Duration: **36 months**

Foundation: **H.F.R.I.**





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Research & Innovation

CONTACT

127, Vasilissis Sofias Avenue
115 21 Athens, Greece
info@elidek.gr
www.elidek.gr



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MINISTRY OF
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