

# Rosa Romero Gómez, Ph.D

DATA VISUALIZATION EXPERT

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## Education

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### UC3M (Universidad Carlos III de Madrid)

PH.D. COMPUTER SCIENCE AND TECHNOLOGY

- Specialty: Human-Computer Interaction, Information Visualization

Madrid, Spain

Oct. 2010 - Jan. 2016

### UC3M (Universidad Carlos III de Madrid)

M.Sc. COMPUTER SCIENCE AND TECHNOLOGY

- Specialty: Distributed, multimedia, and secure systems

Madrid, Spain

Sep. 2009 - Sep. 2010

### UC3M (Universidad Carlos III de Madrid)

B. ENG. COMPUTER SCIENCE

- Specialty: Management

Madrid, Spain

Sep. 2005 - Sep. 2009

## Honors & Awards

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2017 **Winner**, Best Paper Award IEEE Symposium on Visualization for Cyber Security

Phoenix, Arizona,  
USA

2015 **1st Place**, Pedagogical Innovation Contest for High School Education (Universidad Carlos III de Madrid - UC3M)

Madrid, Spain

## Funded Projects

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### “Rhamnusia”: Attributing Cyber Actors Through Tensor Decomposition and Novel Data Acquisition

U.S. DEPARTMENT OF DEFENSE

- Activities: Design and development of open source visualization tools for DNS-based network threat analysis

Role: Research Assistant

Duration: Oct. 2016 - May 2021

### MESCH: Material Encounters with Digital Cultural Heritage

EUROPEAN COMMISSION

- Activities: Design of a tool to support the co-design of the museum visitor experience

Role: Research Assistant

Duration: Feb. 2013 - Jan. 2017

### Civic Engagement in Emergency Management

SPANISH MINISTRY OF ECONOMY AND COMPETITIVENESS

- Activities” Development of visualizations that integrate information from different types of formal and informal channels within the context of emergency volunteers

Role: Research Assistant

Duration: Jan. 2013 - Dec. 2016

### RIA-User Interface with Patterns and Components Reuse

UNIVERSIDAD CARLOS III DE MADRID (UC3M)

- Definition of a taxonomy for rich-user-interface components

Role: Research Assistant

Duration: Jan. 2011 - Dec. 2011

## Open Source Projects

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### Open Source Threat Analysis Console

GEORGIA INSTITUTE OF TECHNOLOGY

- GitHub link: <https://github.com/Astrolavos/THACO>

License: MIT License

Duration: Sep. 2016 - Sep. 2017

# Publications

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## Hiding in Plain Sight: A Longitudinal Study of Combosquatting Abuse

PANAGIOTIS KINTIS, NAJMEH MIRAMIRKHANI, CHARLES LEVER, YIZHENG CHEN, **ROSA ROMERO-GOMEZ**, NIKOLAOS PITROPAKIS, NICK NIKIFORAKIS, AND MANOS ANTONAKAKIS  
Conference paper

*24th ACM Conference on Computer and Communications Security (CCS)*

Oct. 2017

## Towards Designing Effective Visualizations for DNS-based Network Threat Analysis

**ROSA ROMERO-GOMEZ**, YACIN NADJI, AND MANOS ANTONAKAKIS  
Conference paper

*IEEE Symposium on Visualization for Cyber Security*

Oct. 2017

## Measuring Network Reputation In The Ad-Bidding Process

YIZHENG CHEN, YACIN NADJI, **ROSA ROMERO-GOMEZ**, MANOS ANTONAKAKIS, AND DAVID DAGON  
Conference paper

*14th Conference on Detection of Intrusions and Malware and Vulnerability Assessment (DIMVA)*

Jul. 2017

## Visualizing DNS Datasets for Alert-driven Threat Analysis

**ROSA ROMERO-GOMEZ**, YACIN NADJI, PANAGIOTIS KINTIS, AND MANOS ANTONAKAKIS  
Conference paper

*IEEE Symposium on Visualization for Cyber Security*

Nov. 2016

## Alarm Trend Catcher: Projecting Operating Conditions in the Electrical Power Grid Domain with Interactive Alarm Visualization

**ROSA ROMERO-GOMEZ**, AND DAVID DIEZ  
Conference paper

*Proceedings of the XVII International Conference on Human Computer Interaction*

Sep. 2016

## Designing a Human Supervisory Control System for Smart Grid

DAVID DIEZ, **ROSA ROMERO-GOMEZ**, AND SARA TENA  
Journal paper

*IEEE Latin America Transactions*

Apr. 2016

## Towards a Design Pattern Language to Assist the Design of Alarm Visualizations for Operating Control Systems

**ROSA ROMERO-GOMEZ**, AND PALOMA DIAZ  
Book chapter

*Digitally Supported Innovation*

2016

## Multi-view visualizations for emergency communities of volunteers

SERGIO HERRANZ, **ROSA ROMERO-GOMEZ**, PALOMA DIAZ, AND TERESA ONORATI  
Journal paper

*Journal of Visual Languages & Computing 25 (6), 981-994*

Dec. 2014

## Sharing your view: A distributed user interface approach for reviewing emergency plans

DAVID DIEZ, SARA TENA, **ROSA ROMERO-GOMEZ**, PALOMA DIAZ, AND IGNACIO AEDO  
Journal paper

*International Journal of Human-Computer Studies 72 (1), 126-139*

Jan. 2014

## Visualization Techniques to Empower Communities of Volunteers in Emergency Management

SERGIO HERRANZ, **ROSA ROMERO-GOMEZ**, AND PALOMA DIAZ  
Conference paper

*20th International Conference on Distributed Multimedia Systems (DMS)*

Aug. 2014

## Situation Awareness-Oriented Alarm Visualizations: A next Step in HSC Environments

**ROSA ROMERO-GOMEZ**, DAVID DIEZ, PALOMA DIAZ, AND IGNACIO AEDO  
Conference paper

*4th International Conference on Information Visualization Theory and Applications (IVAPP)*

Feb. 2013

## Applying CTA to the Design of SA-oriented Visualizations: Heuristics and Recommendations

ROSA ROMERO-GOMEZ, SARA TENA, DAVID DIEZ, AND PALOMA DIAZ

Book chapter

*Building Bridges: HCI, Visualization, and Non-Formal Modeling*

2014

## Envisioning grid vulnerabilities: multi-dimensional visualization for electrical grid planning

ROSA ROMERO-GOMEZ, DAVID DIEZ, KENT WITTENBURG, AND PALOMA DIAZ

Conference paper

*Proceedings of the International Working Conference on Advanced Visual Interfaces (AVI)*

May. 2012

## Taxonomy for rich-user-interface components: towards a systematic development of RIAs

ROSA ROMERO-GOMEZ, DAVID DIEZ, SUSANA MONTERO, PALOMA DIAZ, AND IGNACIO AEDO

Conference paper

*International Conference on Web Engineering*

Jun. 2011

## Towards a Systematic Development of RIAs: Taxonomy for Classifying Rich-User-Interface Components

ROSA ROMERO-GOMEZ, DAVID DIEZ, SUSANA MONTERO, PALOMA DIAZ, AND IGNACIO AEDO

Conference paper

*Actas de las 16th Jornadas de Ingenieria del Software y Bases de Datos*

Sep. 2011

## Designing usable educational material for English courses supported by mobile devices

ROSA ROMERO-GOMEZ, TELMO ZARRAONANDIA, IGNACIO AEDO, AND PALOMA DIAZ

Book chapter

*HCI in Work and Learning, Life and Leisure*

2010

## Talks

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### IEEE Symposium on Visualization for Cyber Security

PRESENTER FOR <IEEE SYMPOSIUM ON VISUALIZATION FOR CYBER SECURITY>

- Presented conference paper entitled "Towards Designing Effective Visualizations for DNS-based Network Threat Analysis"

*Phoenix (Arizona), USA*

Oct. 2017

### XII Conference of the Italian Chapter of AIS (ITAIS 2015): Reshaping Organizations through Digital and Social Innovation

PRESENTER FOR <XII CONFERENCE OF THE ITALIAN CHAPTER OF AIS (ITAIS 2015): RESHAPING ORGANIZATIONS THROUGH DIGITAL AND SOCIAL INNOVATION>

- Presented conference paper entitled "Towards a Design Pattern Language to Assist the Design of Alarm Visualizations for Operating Control Systems"

*Rome, Italy*

Oct. 2015

### 4th International Conference on Information Visualization Theory and Applications (IVAPP 2013)

PRESENTER FOR <4TH INTERNATIONAL CONFERENCE ON INFORMATION VISUALIZATION THEORY AND APPLICATIONS (IVAPP 2013)>

- Presented conference paper entitled "Situation Awareness-Oriented Alarm Visualizations: A next Step in HSC Environments"

*Barcelona, Spain*

Feb. 2013

### 11th International Conference, ICWE 2011

PRESENTER FOR <11TH INTERNATIONAL CONFERENCE, ICWE 2011>

- Presented conference paper entitled "Taxonomy for rich-user-interface components: towards a systematic development of RIAs"

*Paphos, Cyprus*

Jun. 2011

### 16th Jornadas de Ingenieria del Software y Bases de Datos

PRESENTER FOR <16TH JORNADAS DE INGENIERIA DEL SOFTWARE Y BASES DE DATOS>

- Presented conference paper entitled "Towards a Systematic Development of RIAs: Taxonomy for Classifying Rich-User-Interface Components"

*A Coruña, Spain*

Sep. 2011

## Work Experience

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### GaTech (Georgia Institute of Technology)

Atlanta (GA), United States of America

POSTDOCTORAL RESEARCH SCHOLAR & DATA VISUALIZATION SCIENTIST

Apr. 2016 - Present

- Design and development of open source visualization tools for network threat analysis
- Manage/mentor master students in the fields of Information Visualization and Network Security
- User studies with network threat analysts for usability of such visualization tools

### Kryptowire Mobile Enterprise Security

Fairfax (VA), United States of America

USER INTERFACE DESIGNER

Feb. 2016 - Apr. 2016

- Redesign of three dashboards for their EMM (Enterprise Mobility Management) products

### UC3M (Universidad Carlos III de Madrid)

Madrid, Spain

RESEARCH & TEACHING ASSISTANT

Feb. 2011 - Mar. 2016

- Assist PIs in carrying out research projects related to the design and development of visualization tools for different application domains including power grid networks, emergency management, and cultural heritage
- Do research about how to assist designers in the design of visualizations for human-supervisory control systems
- Teach undergraduate level courses in User Experience(UX) design, Interaction Design (IXD), and programming
- Supervise undergraduate students in the fields of Information Visualization and IXD

### UC3M (Universidad Carlos III de Madrid, Spain)

Madrid, Spain

SOFTWARE ENGINEER INTERN

Sep. 2009 - Jan. 2011

- Design and development of mobile English training courses as practice examples for students at Universidad Carlos III de Madrid

### Elecnor Deimos Space

Madrid, Spain

SOFTWARE ENGINEER INTERN

Jun. 2009 - Aug. 2009

- Carry out test benches for key components of the ground segment of the GNSS (Global Navigation Satellite System) created by the European Union

### Alten Corporate

Madrid, Spain

SOFTWARE ENGINEER INTERN

Feb. 2009, Jun. 2009

- Validation and verification of Telefonica mobile software

## Professional Experience

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### Fifth International Symposium on End-User Development (IS-EUD 2015)

Medialab Prado (Madrid,Spain)

CO-ORGANIZER

May 26-29, 2015

### Design your first web Workshop at the First Symposium of Computing and New Technologies

Universidad Carlos III de Madrid (Madrid, Spain)

ORGANIZER

Feb.15, 2015

## Students Supervised

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### Master Thesis: Visualization of the Use of the IP Address Space for Network Threat Investigation

Degree: Master of Science in Cybersecurity

MIKSU, VOJTECH

Dec. 2016

Georgia Institute of Technology

### Bachelor Thesis: Development of a Software Tool for Data Scraping on Power Grid Performance datasets

Degree: Computer Engineering

LÓPEZ HORNERO, JORGE CARLOS

Jun. 2016

Universidad Carlos III de Madrid (UC3M)

### Bachelor Thesis: Development of Interactive Visualizations to Assist Design Provenance

Degree: Computer Engineering

DEL PORTILLO PEÑA, ELENA

Mar. 2016

Universidad Carlos III de Madrid (UC3M)

## **Bachelor Thesis: Development of an Interactive Alarm Visualization Environment for Power Grid Operations**

ALVAREZ SANCHEZ, FRANCISCO JAVIER

Universidad Carlos III de Madrid (UC3M)

*Degree: Computer Engineering*

*Jul. 2014*

## **Bachelor thesis: Development of a Visualization Environment for Power Grid Operations**

PRADO PARDO, JENIFER

Universidad Carlos III de Madrid (UC3M)

*Degree: Computer Engineering*

*Jul. 2013*

## **Development of a Collaborative Design Environment**

PÉREZ GARCÍA, SARA LUCÍA

Universidad Carlos III de Madrid (UC3M)

*Degree: Computer Engineering*

*Jul. 2013*

## **Skills**

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<b>Programming</b>	D3.js, React.js, Python, Node.JS, LaTeX, R
<b>Web</b>	Flask with Python, Express with Node.JS, HTML5, CSS
<b>Software tools</b>	VCS (git, svn)
<b>Languages</b>	English, Spanish

## **Teaching**

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### **Teaching Assistant**

BACHELOR'S DEGREE IN TELECOMMUNICATION TECHNOLOGIES ENGINEERING (UNIVERSIDAD CARLOS III DE MADRID - UC3M)

*Introduction to Programming*

*Fall 2010-2011*

### **Teaching Assistant**

MASTER IN COMPUTER SCIENCE AND TECHNOLOGY (UNIVERSIDAD CARLOS III DE MADRID - UC3M)

*Design and Evaluation of Interactive Products*

*Spring 2010-2011*

### **Teaching Assistant**

BACHELOR'S DEGREE IN TELECOMMUNICATION TECHNOLOGIES ENGINEERING (UNIVERSIDAD CARLOS III DE MADRID - UC3M)

*Introduction to Programming*

*Fall 2011-2012*

### **Teaching Assistant**

BACHELOR'S DEGREE IN TELECOMMUNICATION TECHNOLOGIES ENGINEERING (UNIVERSIDAD CARLOS III DE MADRID - UC3M)

*Introduction to Programming*

*Fall 2012-2013*

### **Teaching Assistant**

BACHELOR'S DEGREE IN COMPUTER SCIENCE AND ENGINEERING (UNIVERSIDAD CARLOS III DE MADRID - UC3M)

*Design of Interactive Systems*

*Spring 2012-2013*

### **Teaching Assistant**

BACHELOR'S DEGREE IN TELECOMMUNICATION TECHNOLOGIES ENGINEERING (UNIVERSIDAD CARLOS III DE MADRID - UC3M)

*Introduction to Programming*

*Fall 2013-2014*

### **Teaching Assistant**

BACHELOR'S DEGREE IN TELECOMMUNICATION TECHNOLOGIES ENGINEERING (UNIVERSIDAD CARLOS III DE MADRID - UC3M)

*Introduction to Programming*

*Fall 2013-2014*

### **Teaching Assistant**

BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (UNIVERSIDAD CARLOS III DE MADRID - UC3M)

*Introduction to Programming*

*Fall 2014-2015*

