Valer Bocan

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PhD, CSSLP · IEEE Senior Member · ORCID 0009-0006-9084-4064



PROFILE

Software engineer, university teacher and researcher with more than twenty-five years in computing, specialised in the secure development lifecycle, threat modelling, distributed system architecture and cyber security. Lecturer at Politehnica University of Timișoara, co-founder of Storya Soft and Cerberon Security, and holder of a PhD in computer science and of the ISC2 CSSLP certification. Director of a national research project delivered at TRL8, National Management Committee member of a COST Action, IEEE Senior Member, and author of four university textbooks published in 2026.

IDENTIFIERS

ORCID	0009-0006-9084-4064	Scholar	L4UW8nEAAAAJ
Scopus	16032745600	dblp	48/1350
Brainmap	U-2300-069Z-5973	ResearchGate	Valer-Bocan
Web of Science	AAI-3622-2021	GitHub	vbocan

EXPERIENCE

Co-Founder, Cerberon Security

Mar 2025 – present

- Application security assessments against the OWASP Application Security Verification Standard: secure code review, dynamic testing, API, authentication and authorization testing.
- Vulnerability assessment and penetration testing across network, service and application layers, with remediation reporting.
- Secure development lifecycle consulting, threat modeling and secure coding training for client engineering teams.

Lecturer, Politehnica University of Timișoara

Sep 2021 – present

Faculty of Automation and Computing

- Seven undergraduate and master's courses in computing, software engineering and subject didactics.
- Supervises semester projects, bachelor's theses and master's dissertations.
- Directs and contributes to national and international research (PNCDI IV, EUREKA, COST).

CTO and Co-Founder, Storya Soft

Jan 2018 – present

- Software development for major telecom industry clients.
- Microservice architectures on document-database backends; security audits of existing codebases.
- Built IPFees and the IPFLang DSL for intellectual-property fee computation across 118 jurisdictions.

Software Architect, Canon Romania

Apr 2011 – Jan 2019

formerly Océ Software Romania

- Rebuilt a monolithic print order-management system as microservices with asynchronous messaging, decoupling it in both time and space.
- Led the rewrite onto Azure: web apps, storage, logic apps, service bus.
- Sat on the multinational working group that defined the Océ Technical Standard for product software security.
- Introduced formal threat analysis across the product lifecycle: data-flow discovery, threat ranking, attack trees, mitigation.

Software Analyst, Nokia

Sep 2003 – Apr 2011

formerly Alcatel-Lucent

- Designed AnaQoS, a GSM performance analyzer reading raw OMC files, used by hundreds of radio network engineers across every continent.
- Co-designed AMT, a tool for GSM and other network architecture with graphical topology and transport capacity estimation.
- Introduced .NET development to Alcatel-Lucent Romania.
- Published the GSM denial-of-service work that Alcatel University staff first judged impossible, and later accepted.

Software Developer, Computer Voice Systems

Feb 1999 – Sep 2003

Chicago, Illinois

- Customer-care systems for the United States telecom market.

EDUCATION

PhD in Computer Science, Politehnica University of Timișoara

2000–2009

Denial-of-service resistance, authentication protocols, GSM network security and scalable content distribution. Thesis supervised by Prof. Vladimir Crețu, defended 12 June 2009.

Engineer, Five-Year Diploma, Politehnica University of Timișoara

1994–1999

Software application analysis and development. Equivalent to an M.Eng.

CREDENTIALS

Certified Secure Software Lifecycle Professional

held since September 18, 2020

ISC2 · member 822155 · current · credly.com

IEEE Senior Member

awarded April 18, 2026

IEEE · member 99307438 · ieee.org

Alcatel-Lucent Technical Academy (ALTA)

Admitted for significant impact and contribution to the company's development.

FUNDED RESEARCH

6G-PHYSEC: Physical Layer Security for Trustworthy and Resilient 6G Systems

2023–2026

Member, National Management Committee · European Cooperation in Science and Technology (COST) · COST Action CA22168

COST Action on physical-layer security for 6G. I sit on the National Management Committee.

Covert Audio-Video Systems for Authorized National-Security Measures

2024–2026

Project Director · PNCDI IV: Economic RDI activities · PN-IV-P6-6.3-SOL-2024-2-0265 · ~370,000 EUR

A concealable audio-video capture and transmission system delivered at TRL8 to the Ministry of Internal Affairs, with autonomous power management, encrypted storage and secure 4G/5G streaming.

myDROID: Mobile System for Drone Identification and Localization

2025

Project Member - Software Development and Implementation · EUREKA, with national funding via UEFISCDI · UEFISCDI no. 14/09.07.2025 · PN-IV-P8-8.2-EUREKA-2024-0013 (UEFISCDI) · 2024-20355 (EUREKA) · 298,900 EUR

International R&D on detecting and locating drones, with Slovak partners. I am responsible for the software development and implementation.

Machine-Driven Optimizations for Embedded Instruction Set and Software

2024

Researcher · IPCEI on Microelectronics and Communication Technologies (ME/CT) - indirect participants, Investment I4 / Component C9 · 8.PI/I4/C9, Theme 4

Automatic transformation of machine code and embedded software for Software-Defined Vehicles, improving performance, energy efficiency and memory footprint, under Romania's PNRR-funded IPCEI ME/CT program.

THERMOGUARD: Modular Multi-zone Thermal Control, Monitoring & Early Warning System for Industry

2027

Project Director · EUREKA, with national funding via UEFISCDI · PN-IV-P8-8.2-EUREKA-2024-0066 (UEFISCDI) · 2025-25438/NP/OPEN CALL (EUREKA) · 291,000 EUR

International R&D on a modular system for multi-zone thermal control, monitoring and early warning in industrial settings. Awarded the EUREKA label; national funding pending. I am the project director at Politehnica University of Timișoara.

PUBLICATIONS

26	148	45	7	3	2
WORKS	CITATIONS on Google Scholar	CITATIONS in indexed publications, self-citations excluded	H-INDEX Google Scholar	H-INDEX Scopus	H-INDEX Web of Science

JOURNAL ARTICLES · 7

2026 **Bocan, V.**, Stângaciu, C. S., Stângaciu, V., Oprițoiu, F., Laziun, B. A., & Leșeanu, D. *Mobile Video Surveillance Solution and Power Consumption Analysis for Mobile Surveillance Applications.* Electronics 15(5) · 967 · MDPI · ISSN 2079-9292. doi:10.3390/electronics15050967

2026 **Bocan, V.**, & Balas, V. E. *Adversarial Skill File Injection in LLM-Based Intelligent Tutoring Systems: Formal Threat Modeling and Multi-Architecture Validation.* Acta Polytechnica Hungarica · Óbuda University. UNDER REVIEW

2026 **Bocan, V.**, & Balas, V. E. *IPFLang: A Domain-Specific Language for Multi-Currency Regulatory Fee Computation with Static Verification.* IEEE Open Journal of the Computer Society 7 · pp. 1726-1739 · IEEE Computer Society · ISSN 2644-1268. Q1 doi:10.1109/OJCS.2026.3726037

2026 **Bocan, V.** *QRNG-DD: software data diode for quantum random number distribution with AI agent integration.* SoftwareX 34 · 102676 · Elsevier · ISSN 2352-7110. Q2 doi:10.1016/j.softx.2026.102676

2026 **Bocan, V.**, & Balas, V. E. *RUIN: A Language-Model-Assisted Screen for Formalism, Citation Practice, and Artifact Availability in Computer Science Publications.* Scientometrics · Springer. UNDER REVIEW

2025 Spătaru, C. R., **Bocan, V.**, & Popescu, C. C. *Artificial Intelligence: The Catalyst For New Industrial Revolution And Economic Development?.* Theoretical and Applied Economics XXXII · pp. 145-160 · ISSN 1844-0029.

2006 **Bocan, V.**, & Crețu, V. *Threats and Countermeasures in GSM Networks.* Journal of Networks 1(6) · pp. 18-27 · Academy Publishers · ISSN 1796-2056.

BOOK CHAPTER · 1

2012 **Bocan, V.** *DoS Resilience of Authentication Systems.* Digital Identity and Access Management · IGI Global. doi:10.4018/978-1-61350-498-7

CONFERENCE PAPERS · 13

2026 **Bocan, V.**, & Gușiță, B. *Natural Language Access to Vehicle Telemetry via the Model Context Protocol.* ISCEEE 2026 · Novi Sad, Serbia · Academy of Applied Studies Novi Sad.

2025 **Bocan, V.**, Leșeanu, D. F., & Spătaru, C. R. *Performance Evaluation of Selected Raspberry Pi Platforms for Portable Audio-Video Surveillance Systems.* BILTEK 2025 · p. 1151 · Paris, France · ISBN 979-8-89695-302-9.

2025 **Bocan, V.**, Stângaciu, V., Stângaciu, C., Oprițoiu, F., Petrița, T., Alexa, F., Spătaru, C., & Leșeanu, D. *Development of a Modular Covert Audio-Video Surveillance System for National Security Applications Using 4G/5G Transmission.* ISPEC 2025 · p. 245 · Kyrenia, Turkish Republic of Northern Cyprus · ISBN 979-8-89695-279-4.

2025 Spătaru, C. R., **Bocan, V.**, & Popescu, C. C. *Rethinking growth and innovation: The role of artificial intelligence in Europe's industrial transformation.* 12th International New York Conference · pp. 113-126 · Manhattan, New York City, United States · Liberty Academic Publishers · ISBN 979-8-89695-159-9.

2014 **Bocan, V.** *Printing Infrastructure Discovery through Adaptive QR Codes.* AISE 2014 · Phuket, Thailand.

2008 **Bocan, V.** *SCADDIC: The Implementation and Performance of a Scalable and Secure Architecture for Digital Content Distribution.* Communications 2008 · Bucharest, Romania.

2006 **Bocan, V.**, & Crețu, V. *Mitigating Denial of Service Threats in GSM Networks.* ARES 2006 · pp. 523-528 · Vienna, Austria · IEEE Computer Society · ISBN 0-7695-2567-9. doi:10.1109/ARES.2006.81

2006 **Bocan, V.**, & Fagadar-Cosma, M. *Scalable and Secure Architecture for Digital Content Distribution.* SoftCOM 2006 · Split–Dubrovnik, Croatia · ISBN 953-6114-87-9.

2005 **Bocan, V.**, & Făgădar-Cosma, M. *Adaptive Threshold Puzzles.* EUROCON 2005 · Belgrade, Serbia and Montenegro · ISBN 1-4244-0049-X.

2005 **Bocan, V.**, & Făgădar-Cosma, M. *Towards DoS-resistant Single Sign-On Systems.* EUROCON 2005 · Belgrade, Serbia and Montenegro · ISBN 1-4244-0049-X.

2004 **Bocan, V.** *Threshold Puzzles: The Evolution of DoS-Resistant Authentication.* CONTI 2004 49 (63) · ISSN 1224-600X.

2004 **Bocan, V.**, & Crețu, V. *Security and Denial of Service Threats in GSM Networks.* CONTI 2004 49 (63) · ISSN 1224-600X.

2004 **Bocan, V.** *Developments in DoS Research and Mitigating Technologies.* CONTI 2004 49 (63) · ISSN 1224-600X.

PREPRINTS · 1

2026 **Bocan, V.** *Look, Listen, Leak: Out-of-Band WebRTC Pairing as an Enterprise Egress Surface.* SSRN · Elsevier BV. UNDER REVIEW doi:10.2139/ssrn.6997364

DOCTORAL THESIS AND REPORTS · 4

2009 **Bocan, V.** *Contribuții la creșterea disponibilității, scalabilității și securității sistemelor de comunicație.* Politehnica University of Timișoara · Timișoara, Romania · Editura Politehnica · ISSN 1842-7707.

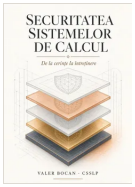
2005 **Bocan, V.** *Sisteme Single Sign-On sub atacuri Denial-of-Service. Studiu de caz: Proiectul Liberty Alliance.* Politehnica University of Timișoara · Timișoara, Romania.

2004 **Bocan, V.** *Studiu asupra nivelului de siguranță oferit de protocoalele de autentificare.* Politehnica University of Timișoara · Timișoara, Romania.

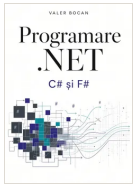
2002 **Bocan, V.** *Stadiul actual al dezvoltării sistemelor de securitate pentru rețele de calculatoare de înaltă siguranță.* Politehnica University of Timișoara · Timișoara, Romania.

Full list with abstracts and full texts: www.bocan.ro/publications/

BOOKS



Securitatea sistemelor de calcul
2026 · Editura Politehnica
559 pp. · ISBN 978-606-35-0690-1 · in press



Programare .NET
2026 · Editura Politehnica
527 pp. · ISBN 978-606-35-0689-5 · in press



Advanced Technologies for Application Development: Problem Solving in Go and Rust
2026 · Editura Politehnica
457 pp. · ISBN 978-606-35-0714-4 · in press



Managementul proiectelor software: Fundamente și practici în era agenților AI
2026 · Editura Politehnica
205 pp. · ISBN 978-606-35-0691-8 · in press

TEACHING

Seven undergraduate and master's courses, Politehnica University of Timișoara.

- SSC Computer Systems Security
- MAP Advanced Programming Methods
- ABD Database Administration
- DS Subject Didactics for Computer Science
- PDN .NET Programming
- MPS Software Project Management
- ATAD Advanced Technologies for Application Development

SERVICE

IEEE Open Journal of the Computer Society
Reviewer · Q1, fully open access, IEEE Computer Society

International Journal of Computational Systems Engineering
Reviewer · Inderscience Publishers

COST CA22168: Physical Layer Security for Trustworthy and Resilient 6G Systems
National Management Committee Member · European Cooperation in Science and Technology

EICEF 2027: International Conference on Energy Informatics and Computer Engineering Frontiers
Technical Committee Member · Nanchang, China, April 2027

SKILLS

Programming	C# · Rust · Go · F# · Forth · JavaScript / Vue.js · SQL · Python
Platforms	.NET / ASP.NET Core · Azure · Linux · Android
Architecture	Microservices · Domain-driven design · Event-driven architecture · Cloud-native · Enterprise engineering
Security	Secure Development Lifecycle · Threat modeling · Attack trees · Security audits · STRIDE · Bell–LaPadula
Data	MongoDB · SQL Server · PostgreSQL · Document stores
Protocols and IoT	SRT · RTSP · RTMP · 4G/5G · GPS / NMEA · FFmpeg · MediaMTX
Operations	Git · Docker · CI/CD · Linux server administration
Languages	Romanian (Native) · English (C2, all competences)

Updated November 2026 · www.bocan.ro/cv/