Danil Annenkov

PERSONAL INFORMATION

Birthdate: 16.11.1981.
Citizenship: Russia.
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PROFILE

I am an experienced researcher and software developer working comfortably with multiple programming paradigms. I am especially interested in applications of functional programming, domain-specific languages, and formal methods to make better software.

My recent focus is the Rust/Wasm stack for smart contracts and integration of cryptographic libraries from the Rust ecosystem into the blockchain infrastructure. Previously, I was working as a researcher in academia, developing software with functional languages and applying formal verification techniques. In addition to that, I founded a software consultancy company where I fulfilled multiple roles, including team leadership and software development.

I am looking for new challenges where my research skills are important to understand bleeding-edge technology and my developer experience allows for converting scientific knowledge into high-quality software. My areas of interest include the financial sector, biotech, and blockchain.

EMPLOYMENT

Senior Scientist (current employment)   **from September 2022**
At Concordium, Aarhus, Denmark
R&D in smart contract technology and formal methods. Software development in Rust. Specifications for a verifiable credentials framework. Integration of Rust cryptographic libraries into the blockchain infrastructure.

Postdoc Researcher   **December, 2018 - August 2022**
At COBRA, Aarhus University, Aarhus, Denmark
Research in formal verification of smart contracts and functional programming. Development of open-source tools for smart contract verification.

Postdoc Researcher   **February, 2018 - November, 2018**
At INRIA, Nantes, France
Research in proof assistant technology and type theory.

PhD Fellow/Research Assistant   **November, 2014 - January, 2018**
At The University of Copenhagen, Copenhagen, Denmark
Research in domain-specific languages for finance and formal verification.

Founder of IB Soft   **2009 - 2014**
A consultancy company focusing on web-based solutions for business
(CRM, Service Department Information System, e-Commerce)

Python/Javascript Developer   **September 2013 - January 2014**
At Exploriana Inc., remote.
Member of the guidemore.com development team.

Part-time teacher   **2010 - 2012**
At Irkutsk State Technical University, Russia

Software Developer   **2004 - 2005**
At Railroad Clinical Hospital, Irkutsk, Russia
Deployment of a medical information system

DevOps/Developer
At Demetra, Irkutsk, Russia   **2002 - 2004**
Windows/Novell Netware administration
Software Development: Delphi, InterBase RDBMS

Research Assistant   **2002 - 2006**
At Irkutsk State Technical University, Russia

EDUCATION

PhD, University of Copenhagen, DIKU   **2014 - 2017**
Phd thesis: *Adventures in Formalisation: Financial Contracts, Modules, and Two-Level Type Theory*
arXiv: https://arxiv.org/abs/1811.11317

Irkutsk State Technical University,   **July, 2002**
Faculty of Cybernetics, Department of Automated Systems (5 of 5 years)
(equivalent to a master's degree)

SKILLS

10+ years of programming experience (both industry and academic).
Programming languages
Rust, Java, Python, JavaScript, Object Pascal, Borland Delphi.
Functional programming languages: Haskell, Scala, Racket (Lisp).
Smart contract languages: CameLIGO (Tezos), Liquidity (Dune), Solidity (Ethereum), Rust (Concordium)
Other: SQL, Matlab
Proof assistants
Coq, Lean, Agda
Version control systems
Svn, Git, Mercurial
Team Leadership
Was a team leader for a small group of developers (3-4 persons).
Misc
Have experience with agile development techniques, testing, and continuous integration.

LANGUAGES

Russian - native
English - fluent (IELTS score 7.0 in 2014)
Danish - completed DU3 (PD3 exam), corresponds to the B2 level of CEFR (according to uim.dk)