Maksim Tropnikov

Frontend Developer

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Experience

Dec 2021 – Present **Frontend Developer**, *R-Style Softlab*, remote.
Development of hybrid mobile applications using Ionic (with Angular) and Apache Cordova frameworks. Migrating old codebase from AngularJS to Stencil and Storybook.
Stack: Angular, TypeScript, Ionic, Cordova, Gitlab, GitHub Flow, Stencil, Storybook, Jest.

Mar 2021 – Present **Frontend Developer (apprenticeship)**, *Yandex.Practicum*, online.
Learning frontend development with MERN stack and related technologies: HTML, CSS, JavaScript, Git, React, Node.js (Express), BEM, OOP, Webpack, Figma.
During my study at Yandex.Practicum on Web Developer course I implemented several projects:

- **Russian Travel.** Adaptive layout from design in Figma. Stack: HTML, CSS (Flexbox, Grid, Animations, Media Queries), BEM. https://github.com/tropnikov/russian-travel
- **Mesto.** Project in vanilla JS implemented first with functional programming, then refactored in the OOP paradigm. Functionality: adaptive layout, downloading cards from the REST server via API, addition/deletion of your card, the ability to like cards and edit profile information; OOP when creating a card, adding them to markup, validating forms and opening the popups. Changes are saved on the server (cards, profile and likes).
  Stack: HTML, CSS, JavaScript, BEM, OOP, NPM, Webpack, Babel, PostCSS.
  https://github.com/tropnikov/mesto
- **Mesto React with authorization and registration.** Mesto project ported on React with main content shown only after authorization (hidden with Protected Route), written in functional components with hooks. Create-React-App, context and controlled components are used. Authorization and registration utilizes JWT-token saved in local storage, validity of token is checked on the server.
  Stack: HTML, CSS, JavaScript, React, React Router, JWT, CRA, BEM.
  https://github.com/tropnikov/react-mesto-auth

All projects were code reviewed.

2013 – 2021 **Junior Researcher at Quantum sensors laboratory**, *Institute of Laser Physics SB RAS*, Novosibirsk, Russia.
Theoretical and experimental research in the fields of laser cooling, quantum optics and atomic standards. My research involved programing in MatLab and the visual language G (LabVIEW).

- Experimental research on the development of an optical frequency standard based on Mg atoms.
- I developed a thermostabilization system based on LabVIEW and using ADC-DAC, and a digital system for the frequency drift compensation of the laser.
- Theoretically modeled laser fields interacting with cooled atoms in MatLab.
- Wrote grant applications, reports and articles for scientific journals.
- Gave talks at conferences, including international ones.

Education

2015 – 2019 **Graduate work at the PhD level in Physics, specialty: Optics**, *Institute of Laser Physics of the Siberian Branch of the Russian Academy of Sciences (ILP SB RAS)*, Novosibirsk, Russia, Laser cooling and spectroscopy of cold magnesium atoms localised in a magneto-optical trap for an optical frequency standard, supervised by the head of Quantum sensors laboratory A.N. Goncharov, PhD.

2013 – 2015 **MSc in Physics**, *Novosibirsk State University (NSU), Department of Quantum Optics*, Novosibirsk, Russia, Radiation source for a frequency standard based on cold magnesium atoms, supervised by leading researcher of ILP SB RAS A.N. Goncharov, PhD.

2009 – 2013 **BSc in Physics**, *Novosibirsk State University (NSU), Department of Quantum Optics*, Novosibirsk, Russia, Investigation of characteristics of radiation source with narrow generation linewidth for a frequency standard based on cold magnesium atoms, supervised by A.M. Shilov.

Other

Predoctoral school *Cold atoms and quantum transport*, *Les Houches Physics school (École de Physique des Houches)*, Les Houches, France, October 2–13, 2017.

Courses and certificates

Web Developer Course, *Yandex.Practicum*, 2021-2022 (ongoing), HTML, CSS, BEM, JavaScript, OOP, React, React Router, Webpack, Node.js, Express, MongoDB.

Interfaces Development: Layout and JavaScript Specialization, *Coursera*, MIPT, Yandex and E-Learning Development Fund, 2021, course 1 of 5.
https://coursera.org/share/05f4f3925639d49a071f68f0c4a2b140

Skills

HTML, CSS, SASS, JavaScript, TypeScript, React, Angular, Node.js (Express), Git, MongoDB, Webpack, Stencil, Storybook, OOP, BEM

Languages

Russian	Native
English	C1
French	A2

Extra info

Interests Digital and analog photography, piano, sport: cycling, running and swimming.

Winner at the 55th International Scientific Student Conference «MNSK 2017» in *Photonics and quantum optical technologies* section. Winner (2018) and third winner (2019) of the ILP SB RAS young students conference contest.

Selected papers

1. Tropnikov, M. *et al. Optical frequency standard based on ultracold magnesium atoms: current status and future prospects* in *MODERN PROBLEMS OF LASER PHYSICS* (2021), 156–157.
2. Goncharov, A. N., Baraulya, V. I., Bonert, A. E. & Tropnikov, M. A. 457-nm radiation source based on a diode laser for precision spectroscopy of magnesium atoms. *Quantum Electronics* **50,** 272 (2020).
3. Tropnikov, M. *et al. Precision Spectroscopy of Cold Magnesium Atoms for an Optical Frequency Standard* in *Nonlinear Photonics* (2018), 23–24.
4. Goncharov, A. *et al. An optical frequency standard based on ultracold magnesium atoms* in *Journal of Physics: Conference Series* **793** (2017), 012008.
5. Tropnikov, M. *Precision spectroscopy of cold magnesium atoms for an optical frequency standards* in *ISSC MNSK-2017: Photonics and quantum optical technologies* (2017), 35.
6. Prudnikov, O. N. *et al.* New approaches in deep laser cooling of magnesium atoms for quantum metrology. *Laser Physics* **26,** 095503 (2016).
7. Tropnikov, M., Shilov, A., Goncharov, A. & Bonert, A. *A radiation source for spectroscopy of 1S0→3P1 transition in magnesium atoms* in *V Russian-Chinese Workshop and School for Young Scientists on Laser Physics and Photonics RCWLP&P-2015* (2015), 30–32.