

# Maksim Tropnikov

*Frontend Developer*

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## Experience

Dec 2021 – **Frontend Developer**, *R-Style Softlab*, remote.

Present 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 – **Frontend Developer (apprenticeship)**, *Yandex.Practicum*, online.

Present 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 programming 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

**Predocctoral 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  $1S0 \rightarrow 3P1$  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.