Nikolai Petrov

Wind Engineering Specialist

Denver, CO (555) 748-2036 nikolai.petrov@email.com
linkedin.com/in/nikolaipetrov johndoe.com johndoe.com/portfolio

SUMMARY

PE-licensed wind engineering specialist with 12 years of experience in wind load analysis, wind tunnel testing coordination, and cladding design for supertall towers, long-span roofs, and bridge decks. Managed wind engineering scopes on 25+ projects across the US and internationally, reducing cladding budget by an average of $1.2M per tower through optimized pressure coefficients. Expert in ASCE 7 wind provisions, CFD simulation, and boundary layer wind tunnel (BLWT) testing protocols.

SKILLS

BLWT Wind Tunnel Testing • ASCE 7 Wind Provisions • CFD Wind Simulation • Cladding Pressure Analysis
Pedestrian Wind Comfort Studies • Aeroelastic Modeling • Wind-Driven Rain Analysis • OpenFOAM / ANSYS Fluent

EXPERIENCE

Senior Wind Engineering Specialist

2018 – Present

RWDI

Denver, CO

Lead wind engineering studies for high-rise towers, stadiums, and long-span roof structures across North America.

- Managed BLWT testing programs for 10 supertall towers (40–72 stories) in NYC, Chicago, and Dallas; delivered cladding pressure reports reducing glazing cost overruns by $1.2M average per project.
- Performed CFD wind assessments for pedestrian wind comfort at 8 urban mixed-use developments, optimizing canopy and landscaping mitigation for city planning approval.
- Coordinated wind tunnel aeroelastic model testing for 3 long-span roof structures (stadiums and airports), ensuring flutter stability margins of 2.0x design wind speed.
- Provided ASCE 7-22 wind load peer review services for 12 structural engineering firms, identifying over-conservative designs averaging 15% excess cladding cost.
- Authored wind engineering criteria reports for 6 projects adopted by local building departments as supplemental design standards.

Wind Engineer

2012 – 2018

CPP Wind Engineering

Fort Collins, CO

Conducted wind tunnel tests and ASCE 7 wind analyses for commercial, industrial, and residential structures.

- Performed BLWT pressure tests for 15 commercial buildings, providing structural engineers with cladding pressure envelopes reducing material costs by 10–18%.
- Completed pedestrian wind comfort studies for 12 urban plazas and transit hubs; all projects achieved ASCE wind comfort criteria without costly mitigation.
- Modeled wind-driven rain penetration for 4 curtain wall systems; findings reduced water infiltration warranty claims by 40%.
- Developed in-house spreadsheet tools for ASCE 7-16 wind pressure calculation, adopted by 3 regional engineering firms.
- Contributed to 5 peer-reviewed papers on computational wind engineering and extreme wind event modeling.

EDUCATION

M.S.

2012

Colorado State University

Fort Collins, CO

Civil / Wind Engineering

GPA: 3.9

CERTIFICATES

Certified Wind Engineer (CWE)

American Society of Civil Engineers (ASCE)

Jan 2020

Certified wind engineer with expertise in wind tunnel testing, CFD, and wind load analysis.

LANGUAGES

English
Native

Spanish
Fluent

HOBBIES

Hiking • Reading