

ZACHAR DAVYDOV

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PROFESSIONAL SUMMARY

Structural engineering professional with seven years of experience in building design and infrastructure inspection. Personally handled structural design for more than 30 buildings across steel, concrete, masonry, and timber systems, and led inspection teams on major New York transit infrastructure. Experienced in coordinating with architects, contractors, and clients, and in training and managing staff. After switching careers to manage my own fund and research arm for five years, I am now returning to structural engineering to build a long-term career in Miami.

EDUCATION

B.Sc. Civil Engineering — University of Hartford, 2014

PROFESSIONAL EXPERIENCE

Founder / Portfolio Manager — Kasatka Research | Self-Employed, Miami, FL

2021 – Present

- Founded and manage an independent markets research operation covering macroeconomics, digital assets, equities, commodities, and market structure.
- Developed quantitative research and back-testing workflows to test market hypotheses across historical price data, including event studies, seasonality and calendar effects, intraday behavior, volatility regimes, cross-asset correlations, technical patterns, positioning, and post-event price responses; integrated results with macroeconomic, fundamental, sentiment, and on-chain data to identify statistically recurring behavior and evaluate risk/reward.
- Managed personal capital using research-driven discretionary trading and investing, achieving a cumulative return of 1,566% within four years (102% CAGR) at peak performance.

Assistant Team Leader — JUNMA Engineering PLLC, New York, NY

2017 – 2021

- Verrazzano-Narrows Bridge (MTA TBTA): Performed 2018 biennial and 2019 special in-lieu-of-interim inspections of all main suspended spans — top/underside deck, bearings & pedestals, anchorage cable strands & saddles, suspension cables, tower struts & wind restraints, tower-top foundations; authored sections of Pre-Final, Cables & Anchorage, Wearing Surface, Light Pole/Sign Gantry, Misc. Walls, and Winter Rocker Bearing & Finger Joint reports.
- Henry Hudson Bridge, Queens-Midtown Tunnel, Hugh L. Carey Tunnel (MTA TBTA): Inspected and rated deck elements, bearings, masonry abutments & wing walls, steel framing (columns, girders, stringers, floorbeams, diaphragms, diagonal bracing), and HHB arch ribs across 10 BINs for the 2019 biennial cycle and associated repair design; contributed UI improvements to Scanprint IMS and reconciled element-quantity discrepancies across BDIS, the TBTA Database, and two Scanprint versions.
- Broadway Junction Station, J-Z / A-C / L Lines (MTA NYCT): Led a 6-person subcontractor team inspecting three elevated and sub-grade stations from track-level catwalks during live traffic, plus platforms, mezzanines, ramped areas, and the control building; coordinated three separate reports with component repair work and condition rating logs.
- Park Avenue Viaduct Fixation System (MTA MNR): Inspected concrete rail plinths, 3rd-rail grout pads, and steel connections across 4 tracks and up to 89 spans for 21 distinct defect types; compiled inspection data into multiple database formats and quantified deltas against the 2015 baseline.
- Goethals Bridge, Jamaica Line, Cedarview Pedestrian Bridge, VNB Approach Ramps (TBTA / NYCT / SIRT): Inspected suspension, arch, elevated-transit, and pedestrian structure elements (primary members, cap beams, wearing surface, sidewalks/fascias, parapets, underside deck, abutments, columns, footings); built reusable field-note templates from prior-cycle defects, produced element sketches, and operated aerial platform trucks under high-priority access conditions.

Junior Structural Design Engineer — Solomon Rosenzweig, PE P.C., Brooklyn, NY

2014 – 2017

- Coordinated daily with architects, contractors, and clients to deliver structural designs and bring 30+ buildings to completion.
- Designed structural systems: concrete slab on metal deck with steel beams (composite and non-composite), light-gauge steel joists with CMU bearing walls, full cast-in-place concrete framing, pre-cast concrete plank, and natural/engineered lumber framing.
- Designed support of excavation systems and sequencing logistics per Transit Authority and DOB Special Enforcement Unit requirements.
- Conducted site visits of existing structures for alteration plans and new construction to verify compliance with approved drawings; held project meetings with clients, architects, contractors, and Transit Authority plan examiners.
- Performed repair work on brick facades, fire-damaged buildings, structurally inadequate construction, and vertical/horizontal extensions.
- Managed, trained, and delegated workflow to four employees in close communication with CEO; edited contract document language and completed DOB filings (TR3s, AI1s).

Engineering Internships — URS Corp. · Caro Enterprises · SMS Universal · Tsao & McKown,

2007 – 2014

- Supported biennial inspections of Marine Parkway and Cross-Bay Bridges under TBTA/NYS DOT — drawing review, report compilation, MicroStation/AutoCAD Civil 3D markups.
- Managed document control, trade coordination, MEP fee estimates, and contract/job-cost records across hotel renovation, subcontractor, and architectural projects.

CERTIFICATIONS

FHWA-NHI

Bridge Inspection Safety (2018)
Fracture Critical Steel Bridges (2017)
Tunnel Safety Inspection (2019)
Asphalt Paving Inspection (2021)

OSHA

10-Hour Safety
Fall Protection
Permit-Required Confined Space

MTA

MNR Safety Course
NYCT Track Safety

TECHNICAL PROFICIENCIES

AI / RESEARCH TOOLS

Claude Code
Grok
Gemini
ChatGPT
Seedance
Midjourney
ElevenLabs
DaVinci Resolve

ENGINEERING / OFFICE

Microsoft Office Suite (advanced Outlook, Word, Excel)
Adobe Acrobat Pro
Bluebeam Revu
AutoCAD
Civil 3D
Revit Structure
RAM Structural System
CSI SAFE