Zain Dana Harper

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Urban Forestry, Commercial Arboriculture & Field Crew Leader

30-Second Work-Sample Proof Strip

- **11 Years Crew Lead:** Commercial tree care & aerial rigging
- **Zero-Margin Safety:** 100+ ft hazard envelopes & site control
- **Client Education:** Clear biology & structural explanations
- **Canopy Biomechanics:** Live tree-stress & wind-load modeling

Executive Profile

Experienced commercial arboriculture operator and tree-care crew leader with 11 years of hands-on Pacific Northwest urban forestry work. Proven in high-hazard rigging, site scoping, crew coordination, and educating homeowners on tree biology, structural defects, and why each intervention protects both canopy health and property. Uniquely pairs practical trade mastery with applied biomechanics modeling and modern field-data tooling.

Core Capabilities & Skills

Field Operations & Arboriculture: Tree-Care Crew Leadership, Aerial Rigging & Ground Support, Crane/Clearance Coordination, Hazard Tree Assessment, Structural Pruning Principles, Dynamic Load-Path Management, Site Protection

Client & Crew Communication: On-Site Job Scoping & Written Proposals, Setting Clear Client Expectations, Educating Homeowners on Tree Biology & Structure via Organic Analogies, Vendor & Crew Scheduling

Applied Ecology & Technical Edge: Williams/Almeras Tree Biomechanics & Wind-Load Simulation, Ecological & Field Data Analysis, Documentation & Safety Playbooks, GPS/Site Archival & Photographic Logging

Arboriculture & Field Operations Leadership

Tree Care Crew Lead & Commercial Arboriculture Operations | Legendary Tree
Seattle Area, WA | April 2015 - June 2026

- **Crew Leadership Under High Hazard:** Operated and led tree-care crews for 11 years across complex residential and commercial Pacific Northwest sites, managing rigging forces, drop zones, clearances, and 100+ ft aerial hazard envelopes with steady judgment.
- **Homeowner & Client Education:** Walked clients through every site assessment in plain language, explaining tree biology, compartmentation, branch unions, root zones, and the exact reason behind each cut using concrete organic analogies.
- **Scoping, Estimating & Logistics:** Conducted field inspections, drafted clear job scopes and expectations, coordinated crews, equipment access, and property protection, and resolved unpredictable field conditions safely on schedule.
- **Safety Culture & Checklist Discipline:** Enforced pre-cut communication, load-path verification, and dynamic ground-to-canopy awareness so crew members always knew the plan before a single limb moved.

Applied Tree Biomechanics, Ecology & Field Data Systems

Independent Ecological Modeler & Systems Builder | Harper Research & Open-Source Ecosystem
Seattle, WA | 2013 - Present | harperz9.github.io

- **Tree & Foliage Biomechanics Modeling:** Translated real-world field intuition into coupled trunk, branch, and canopy cantilever bending models (Williams/Almeras growth-stress, gust turbulence, rain/snow load deflection) inside the open-source Superframe simulation engine.
- **Field Documentation, Data & Verification:** Authored clear operational playbooks, 30 structured empirical studies (including ecological and physical-systems work, 13 Zenodo DOIs), and local-first photographic/media archival workflows built for reliable field inspection.

Earlier Customer Support & Education

Technical Support Specialist | Stream/Convergys (Xbox Contract, Wilsonville, OR) | 2014 - 2015

- **Customer Service & Troubleshooting:** Guided customers calmly through complex technical problems by phone and chat, writing repeatable step-by-step handoff guides.

Education

- **Education & Continuing Study:** High School Diploma, Wilsonville High School (2013); 11 years hands-on urban forestry field practice and continuous independent study in tree biology, ecology, and physics.