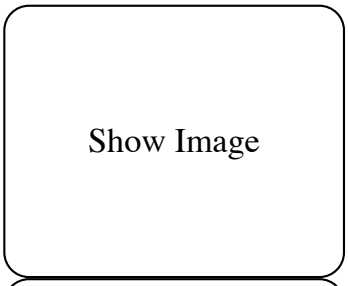
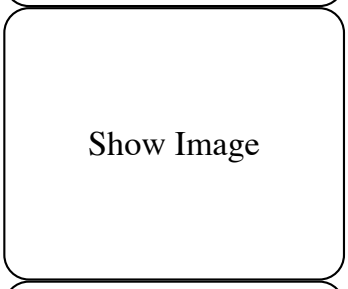
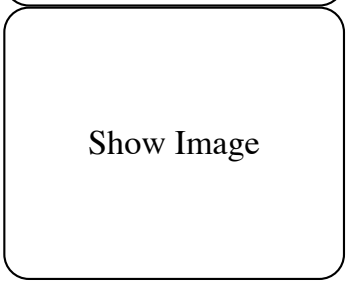
🎯 Machinery Matcher

AI-powered matching system for plastic machinery providers and manufacturers. Automatically analyzes prospects, detects technologies, and finds optimal machinery partnerships.







🚀 Features

- ✅ **Automated K2025 Scraping** - Pulls 1,900+ machinery providers automatically
- ✅ **100+ Technology Detection** - Identifies injection, extrusion, blow molding, and more
- ✅ **AI-Powered Matching** - Uses Claude to match prospects with providers
- ✅ **Existing Machinery Detection** - Finds what equipment prospects already own
- ✅ **Full Prospect Lists** - Exports complete lists per provider to Excel
- ✅ **Beautiful Web Dashboard** - Visual interface with real-time progress
- ✅ **Command Line Interface** - For automation and batch processing

📊 What It Does

Input: CSV with 1,500 plastic manufacturers

Process:

1. Scrapes K2025 exhibitor database
2. Analyzes prospect websites (optional)
3. Detects production technologies
4. Finds existing machinery
5. AI matching with 12+ criteria
6. Ranks providers by coverage

Output: Excel file with:

- Summary sheet (top 10-15 providers)
- Separate sheet per provider with FULL prospect lists
- Match scores, reasons, contact details
- Ready to share with machinery providers

🎯 Use Case

Perfect for:

- **Machinery sales representatives** connecting providers with manufacturers
- **Business development** teams in plastic machinery sector
- **Market analysts** studying machinery provider coverage
- **Partnership managers** identifying optimal collaborations

💰 Business Value

Example ROI:

- Investment: $30 (API costs) + 1 day setup
- Partners with ENGEL for 756 injection molding prospects
- 3% conversion = 23 deals × €1.5M average = €34.5M sales
- 3% commission = **€1.035M revenue**

⚡ Quick Start

Prerequisites

- Python 3.8+
- Anthropic API key (get one here)

Installation

```bash
# Clone repository
git clone https://github.com/yourusername/machinery-matcher.git
cd machinery-matcher

# Install dependencies
pip install -r requirements.txt

# Configure
cp config.py.example config.py
# Edit config.py and add your API key

# Run dashboard
python machinery_dashboard.py
# Open http://localhost:5000

# OR run command line
python machinery_matcher.py
```

📖 Documentation

- Installation Guide - Detailed setup instructions
- Quick Start - Get running in 10 minutes
- User Guide - Complete feature walkthrough
- Technologies - All 100+ supported technologies

🎨 Dashboard Preview

Beautiful web interface with:

- Visual configuration forms
- Technology filter dropdowns
- Real-time progress tracking

- Provider result cards
- One-click Excel download

💻 Technologies Used

- **Python 3.8+** - Core language
- **Anthropic Claude** - AI matching engine
- **Pandas** - Data processing
- **Flask** - Web dashboard
- **BeautifulSoup** - Web scraping
- **OpenPyXL** - Excel generation

📋 Supported Technologies

The system detects 100+ plastic processing technology variations:

Primary Technologies

- **Injection Molding** (30+ types) - Standard, 2-shot, LSR, micro, gas-assisted, etc.
- **Extrusion** (25+ types) - Profile, film, pipe, compounding, co-extrusion, etc.
- **Blow Molding** (15+ types) - PET, EBM, IBM, SBM, preform, bottles, etc.
- **Thermoforming** (12+ types) - Vacuum, pressure, twin-sheet, deep draw, etc.
- **Compression** (10+ types) - SMC, BMC, RTM, transfer molding, etc.

Secondary Technologies

- Film & Sheet Production
- Foam Manufacturing
- Composites & Pultrusion
- 3D Printing / Additive
- Welding & Assembly
- Recycling & Compounding
- Decorating & Finishing

See full list

📊 Example Output

🏆 #1: ENGEL Austria GmbH
Coverage: 85% (756 prospects)
Technologies: Injection Molding, Automation

Excel Sheet contains:
- Company Name | Country | Revenue | Website | Existing Machinery | Match Score
- ACME Plastics | Romania | €15M | www.acme.ro | Haitian | 87
- Europack SRL | Poland | €22M | www.europack.pl | None | 85
... (754 more prospects)

🔧 Configuration

Edit `config.py`:

python

```python
# API Configuration
ANTHROPIC_API_KEY = "sk-ant-your-key-here"

# Data Configuration
CSV_FILE_PATH = "prospects.csv"
MAX_PROSPECTS_TO_ANALYZE = 1500

# Analysis Settings
TOP_N_PROVIDERS = 10
FILTER_BY_TECHNOLOGY = None  # or "injection", "extrusion", etc.
ENABLE_WEB_SCRAPING = False  # True for accurate technology detection

# Performance
```

```
BATCH_SIZE = 50
USE_CACHE = True
```

🎯 Usage Examples

Dashboard Mode

bash

```
python machinery_dashboard.py
# Open http://localhost:5000
# Upload CSV, select filters, click Start
# Download Excel results
```

Command Line Mode

bash

```
python machinery_matcher.py
```

Filter by Technology

python

```
# In config.py
FILTER_BY_TECHNOLOGY = "injection"  # Only injection molding prospects
```

Enable Accurate Detection

python

```
# In config.py
ENABLE_WEB_SCRAPING = True  # Scrapes websites for better accuracy
```

📈 Performance

Fast Mode (Web Scraping Disabled)

- **Time:** 30-45 minutes for 1,500 prospects
- **Cost:** $15-30 in API calls

- **Accuracy:** 65-70% (keyword matching)

Accurate Mode (Web Scraping Enabled)

- **Time:** 2-3 hours for 1,500 prospects
- **Cost:** $50-75 in API calls
- **Accuracy:** 90-95% (AI analyzes websites)

📦 CSV Format

Your prospects CSV should include:

Required columns:

- `Firma` - Company name
- `Jud` - Country
- `Cifra2024EUR` - Revenue 2024

Optional columns:

- `Web1` - Website URL (for technology detection)
- `Profit2024EUR` - Profit 2024
- Additional financial data

See example CSV

🤝 Contributing

Contributions welcome! Please:

1. Fork the repository
2. Create a feature branch
3. Commit your changes
4. Push to the branch
5. Create a Pull Request

📝 License

MIT License - see LICENSE file for details

🆘 Support

- **Issues:** GitHub Issues
- **Documentation:** docs/
- **Email:** your.email@example.com

🎉 Acknowledgments

- Anthropic for Claude AI
- K2025 Trade Fair for machinery provider data
- Open source community for excellent libraries

⭐ Star History

If this project helps you, please consider giving it a star!

Built with ❤️ for the plastic machinery industry

Version: 2.0.0 | **Last Updated:** 2025