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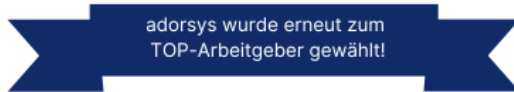
Automating the Creation of Linked Data Repositories with Fluree Software

13 December 2024



adorsys

- IT and Information Architects for the “What’s Next”
- Founded 2006
- >200 Employees in Germany, Ireland, US & Cameroon, Romania



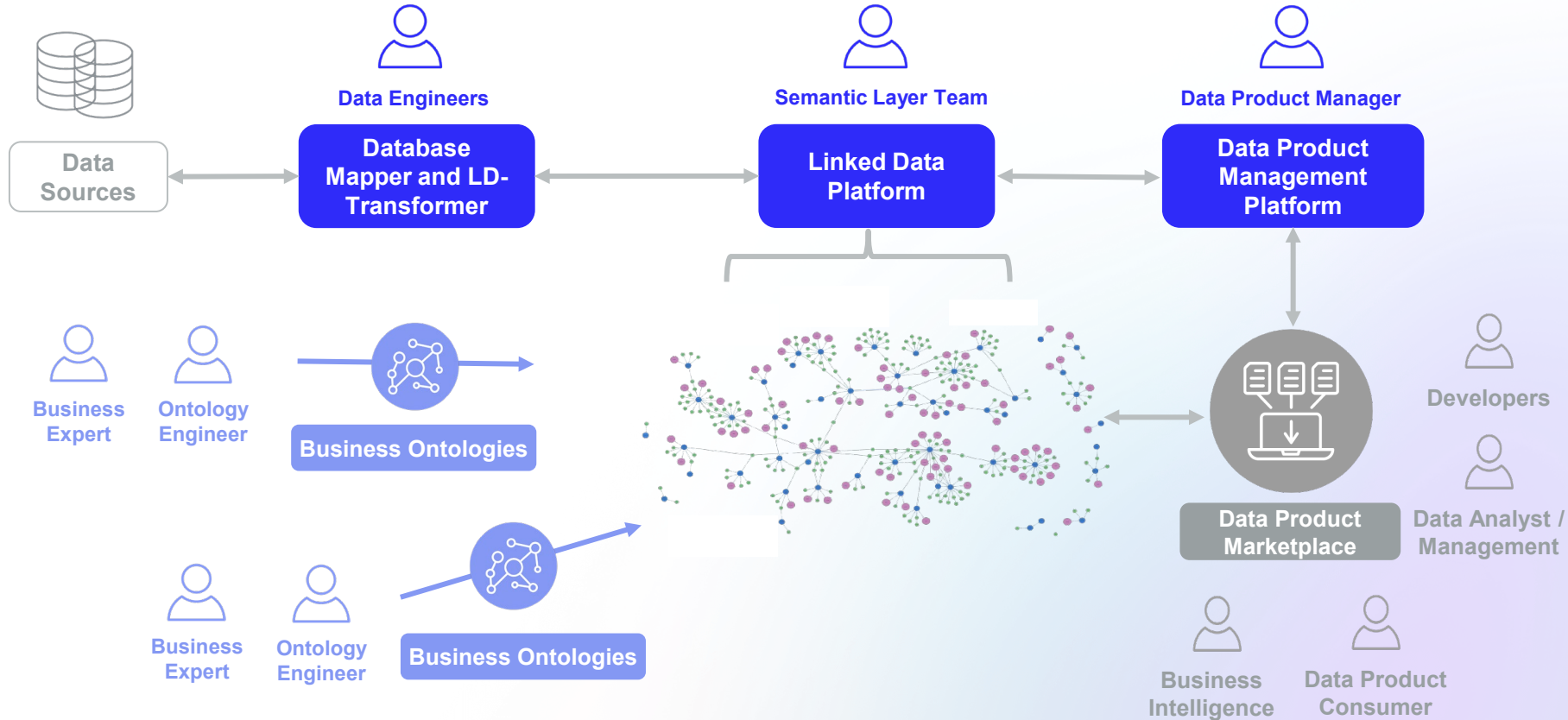
Wir gehören somit zu den rund 5% beliebtesten Unternehmen auf kununu.

fluree™

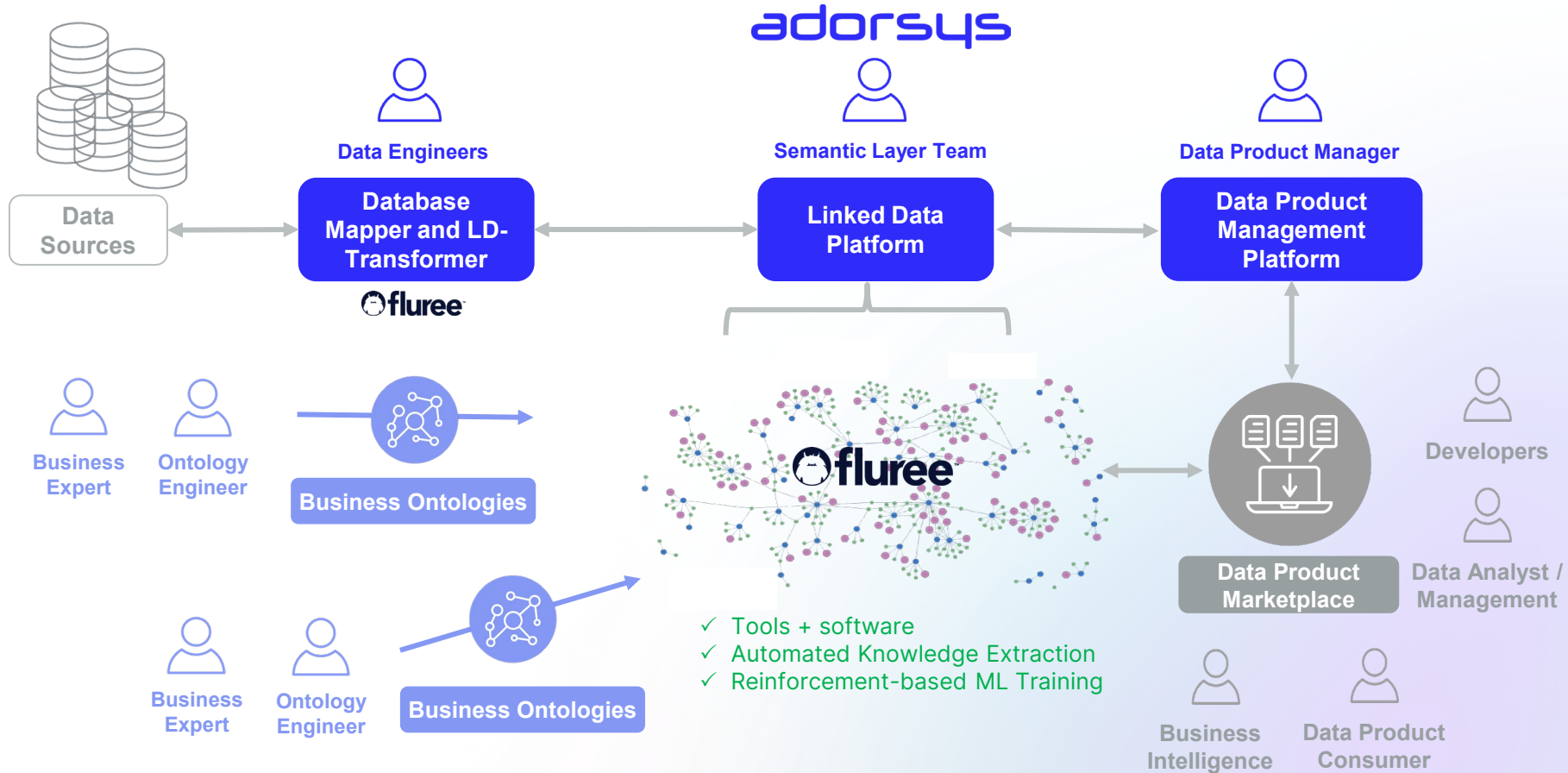
- Semantic Knowledge company
- Launched Generally Available Software in 2020
- Over 40+ customers globally
- Industry-recognition: Gartner Cool Vendor 2024 for GenAI Data Management



The Vision: Semantic Data Products



The Solution: Automated Knowledge

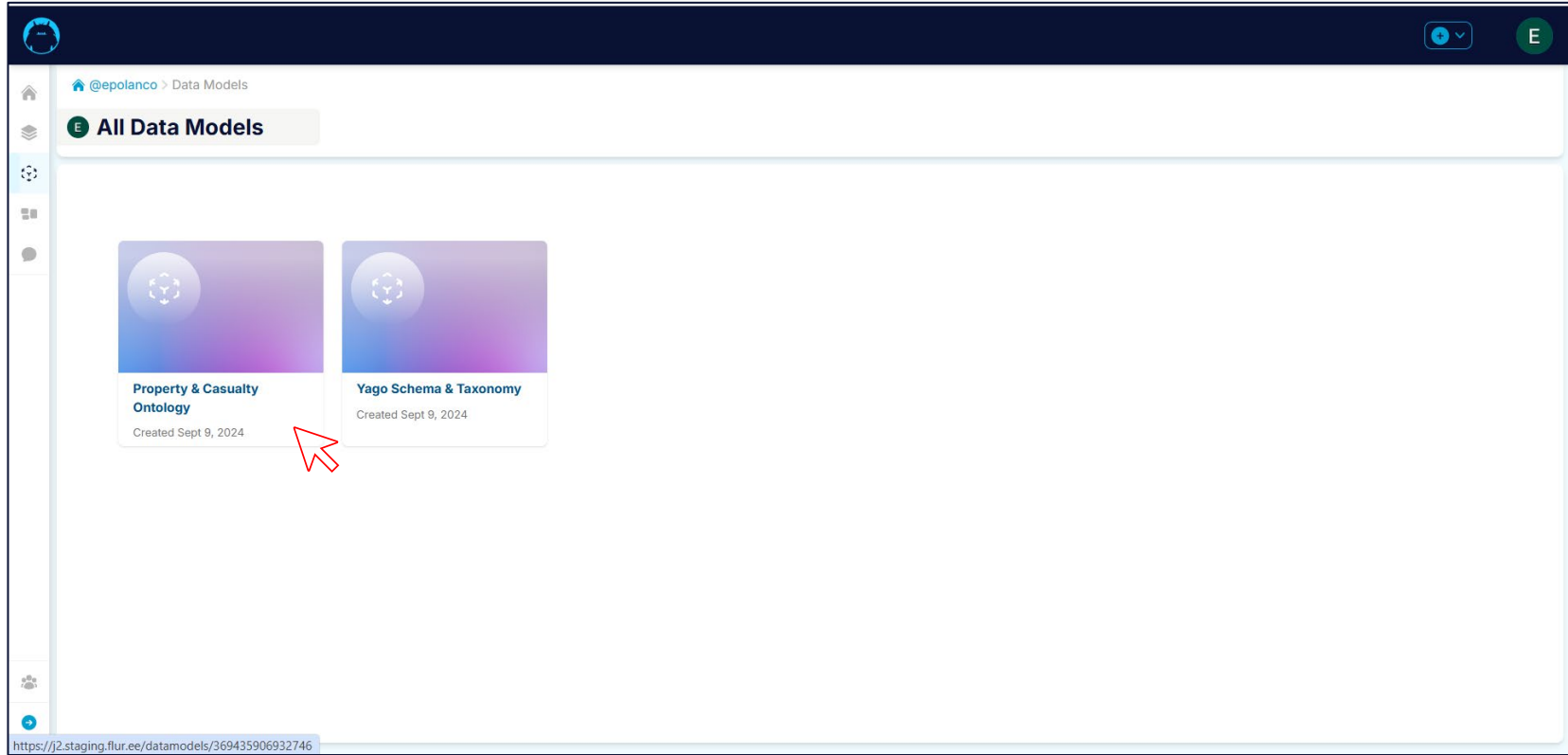


Demonstration of Fluree Software

From Data to Knowledge in Five Steps

1. Build an Ontology
2. Train ML Model to Extract Knowledge from Documents / Data
3. Connect to Sources and Map Data At Scale
4. Load to Knowledge Graph
5. Interact With Data

1. Build an Ontology



The screenshot displays the Adorsys Fluree Data Models interface. At the top, the breadcrumb navigation shows '@epolanco > Data Models'. Below this, a header bar contains the text 'All Data Models' next to a circular icon with the letter 'E'. The main content area features two ontology cards, each with a purple-to-blue gradient background and a circular icon containing a network diagram. The first card is titled 'Property & Casualty Ontology' and was created on 'Sept 9, 2024'. The second card is titled 'Yago Schema & Taxonomy' and was also created on 'Sept 9, 2024'. A red mouse cursor is positioned over the first card. The bottom of the interface shows a URL: <https://j2.staging.flur.ee/datamodels/369435906932746>.

1. Build an Ontology

The screenshot shows the Fluree ontology editor interface. At the top, there's a navigation bar with a home icon, a user profile icon, and a search icon. Below the navigation bar, the breadcrumb path is '@epolanco > Data Models > Property & Casualty Ontology'. The main title is 'Property & Casualty Ontology'. On the left, there's a sidebar with a list of classes: 'Catastrophe Impact', 'Repair Item Name', 'Claim', 'Adjustor Email', 'Adjustor Phone Number', 'Associated To Policy Code', 'Catastrophe Impact' (selected), 'Cause Of Loss', 'Claim Description', 'Claim Incurred Date', 'Document Reference', 'Estimation Full Text', 'For Covered Property', and 'Has Repair Items'. The main content area is titled 'Property & Casualty Ontology' and shows the details for the 'Claim : Catastrophe Impact' class. The details are presented in a table format:

iri	http://flur.ee/Deloitte/Property_Casualty_Insurance_Ontology/catastrophelmpact
label	Catastrophe Impact
description	A description of the type of asset, function or feature of a property that was impacted by the triggering event described in the Cause of Loss. The purpose of understanding the catastrophe impact is that this is a good way of determining what features or elements of a real estate property are the most affected during a catastrophic event. The catastrophe impacts with the highest repair reimbursement amount tend to be the largest risks. If we see real estate properties that are associated to catastrophe impacts with relatively high volume or cost in repair estimates, this means that the property is likely to be more expensive to cover. Subsequently, the cost of underwriting the insurance plan for this property should ne higher.
data type	ci:Claim/Catastrophelmpact

Below the table, there's a section titled 'Parent Classes' with a single class listed: 'Claim'.

2. Train ML Model to Extract Knowledge from Data

Estimate Assessment
IN
FILING OF CLAIM

POLICY No: 966615777

Adjuster Contact Information: 001-434-626-0830x1149, kevinwhite@example.org

Date of Incident: 4/30/2023

Property Address: 32730 Phillips Court Apt. 328
Mosesfurt, Pennsylvania

Type of Incident: water heater leak

Description of Incident: The villa was evacuated by the family due to a water heater leak that caused significant structural damage to the roof, basement floor, and top floor. However, they are expected to return in 1-2 weeks.

Estimations: The cost of acquiring temporary housing is \$4308, while the building itself is priced at \$20438 and the appliance is replaced for \$1234.

Authorized on: 4/30/2023

2. Train ML Model to Extract Knowledge from Data

The screenshot displays the MONDECA CAM Workbench interface. The top navigation bar shows 'Dashboard' and 'Workbench' tabs, with the user 'admin' and a help icon. The main content area is titled 'Property Casualty Insurance Ontology Extraction UI / 02-real_estate_insurance_claims_03-sample-1-line.csv'. On the left, a 'Filters' sidebar allows filtering by categories (Detected, Inferred), score (0 to 1), and types (Catastrophelmpact, Claim, ClaimRepairItem, PIIData, Person, Policy, RepairItemName). A 'Reset filters' button is at the bottom of the sidebar. The main area features a search bar, a '+ Add' button, and a 'Tags list' dropdown. Below this is a table of extracted entities:

Detail	Category	Tag name	Type	Count	Score ↓
+	D	appliance repair/replace...	RepairItemName	1	0.67
+	D	construction repair	RepairItemName	1	0.67
+	D	temporary housing	RepairItemName	1	0.67
+	D	water heater leak	Catastrophelmpact	1	0.49
+	D	basement	Catastrophelmpact	1	0.49
+	D	top floor	Catastrophelmpact	1	0.49
+	D	villa	Catastrophelmpact	1	0.49
+	D	roof	Catastrophelmpact	1	0.49
+	I	966615777	Policy	0	-

At the bottom of the table, it shows 'Items per page: 25' and '1 - 15 of 15'. To the right of the table is a text view of the original document with highlighted entities: 'The villa was evacuated by the family due to a water heater leak that caused significant structural damage to the roof, basement floor, and top floor. However, they are expected to return in 1-2 weeks. The cost of acquiring temporary housing is \$4308, while the building itself is priced at \$20438 and the appliance is replaced for \$1234.'

3. Connect to Sources and Map Data At Scale

The screenshot displays the fluree Ingest interface for configuring a pipeline. The top navigation bar includes the fluree logo, 'Ingest', a 'Start by Default' checkbox, and tabs for 'Ingestion Pipelines' and 'Data Transformation Pipelines'. The main header shows 'Pipelines / Data Source Integration Pipeline' and a toolbar with icons for saving, undo, redo, deleting, and starting the pipeline. The pipeline itself is a linear sequence of six steps: 'Source Data Location', 'Convert to Base 64 Encoding', 'Get Security Token', 'Call Knowledge Extraction Workflow', 'Publish API to Knowledge Graph', and 'Finish Pipeline'. A right-hand sidebar lists various data origins such as Amazon S3, Amazon SQS, Amazon RDS, Azure Blob Storage, and others. Below the pipeline canvas, a configuration panel for the 'Data Source Integration Pipeline' is shown, with tabs for 'General', 'Cluster', 'EMR', 'Dataproc', and 'Test Origin'. The 'General' tab is active, showing fields for 'Pipeline ID' (TestCAMI001a62e1-3d49-4764-ab7a-1d1dbe7cfc48), 'Title' (Data Source Integration Pipeline), 'Description', and 'Labels'.

fluree sense Ingest Start by Default **Ingestion Pipelines** **Data Transformation Pipelines** Powered by StreamSets 13_user 73 Sign Out

Pipelines / Data Source Integration Pipeline All Changes Saved Start

Source Data Location → Convert to Base 64 Encoding → Get Security Token → Call Knowledge Extraction Workflow → Publish API to Knowledge Graph → Finish Pipeline

Data Source Integration Pipeline Show Advanced Options

- Summary
- Info
- Configuration
- Rules
- History

General | Cluster | EMR | Dataproc | Test Origin

Pipeline ID: TestCAMI001a62e1-3d49-4764-ab7a-1d1dbe7cfc48

Title: Data Source Integration Pipeline

Description:

Labels:

Origins

- Amazon S3
- Amazon SQS Consumer
- Aurora PostgreSQL
- Azure Blob Storage
- Azure Data Lake Storage
- Azure Data Lake Storage
- Azure Data Lake Storage
- Azure IoT/Event
- CoAP
- CoAP Server
- CONNX
- CONNX CDC
- Cron Scheduler

4. Load to Knowledge Graph

The screenshot shows the Adorsys Fluree interface for a Knowledge Graph dataset named "PropertyCasualtyInsurance". The interface is divided into several sections:

- Header:** Shows the user profile "@epolanco" and the dataset path "Datasets > PropertyCasualtyInsurance".
- Left Sidebar:** Contains navigation options: "About", "View Data", "View Data Model", "Notebooks", "Keyword Filter", "AI_Context", "Quick Start Guide", "Queries", and "Keyword Filter".
- Classes Panel:** A list of classes and properties for the selected class "ci:Claim". The "ci:Claim" class is selected, and its properties are listed with checkboxes: @id, @type, ci:adjustorEmail, ci:adjustorPhoneNumber, ci:associatedToPolicyCode, ci:catastrophelmpact, ci:causeOfLoss, ci:claimDescription, ci:claimIncurredDate, ci:documentReference, ci:estimationFullText, ci:forCoveredProperty, ci:hasRepairItems, and ci:policyCode.
- Main Table:** Displays data for the "ci:Claim" class. The table has columns: "@type", "ci:adjustorEmail", "ci:adjustorPhoneNumber", "ci:associatedToPolicyCode", and "ci:catastrophelmpact".

@type	ci:adjustorEmail	ci:adjustorPhoneNumber	ci:associatedToPolicyCode	ci:catastrophelmpact
ci:Claim	sarahheath@example.net	(912)753-2962	ci:Policy/805782346	ci:Claim/Catastrophelmpact/130 ci:Claim/Catastrophelmpact/136 ci:Claim/Catastrophelmpact/165 ci:Claim/Catastrophelmpact/166 ci:Claim/Catastrophelmpact/188 ci:Claim/Catastrophelmpact/205 ci:Claim/Catastrophelmpact/210 ci:Claim/Catastrophelmpact/229
ci:Claim	lhines@example.org	+1-821-711-9003x779	ci:Policy/538042637	ci:Claim/Catastrophelmpact/154 ci:Claim/Catastrophelmpact/185 ci:Claim/Catastrophelmpact/2 ci:Claim/Catastrophelmpact/205 ci:Claim/Catastrophelmpact/23 ci:Claim/Catastrophelmpact/86 ci:Claim/Catastrophelmpact/9 ci:Claim/Catastrophelmpact/96
- Footer:** Includes navigation buttons "Previous" and "Next" and a page indicator "1 2 3 ... 67".

5. Interact With Data



The screenshot shows a chat window with a sidebar on the left containing a list of conversations. The main chat area displays a message from a user asking for the top 5 causes of claims by repair estimate amount. The AI assistant responds with a scatter plot titled "Causes of Claims" showing the repair estimate amount for five categories: hvac system malfunction, flooding, severe weather impact, mold infestation, and roof flashing damage.

Causes of Claims

Cause of Claim	Repair Estimate Amount (\$)
hvac system malfunction	50000
flooding	38000
severe weather impact	35000
mold infestation	32000
roof flashing damage	30000

Thank you.



Keep in touch with us flur.ee